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Preparation for menopause : development and evaluation of a health education intervention for mid-aged women.

Liao, Karen Lih-Mei

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Thesis submitted to the University of London
for the degree of Doctor of Philosophy

PREPARATION FOR MENOPAUSE:
DEVELOPMENT AND EVALUATION OF
A HEALTH EDUCATION INTERVENTION
FOR MID-AGED WOMEN

1995

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Preparation for menopause: development and evaluation of a health education intervention for mid-aged women.

This thesis examines the multi-disciplinary literature on menopause, develops and evaluates an intervention to prepare mid-aged women for the menopause transition. The literature review suggests that the intervention should aim to increase knowledge of menopause, counter overly negative attitudes, and promote health-enhancing behaviours, framed in a biopsychosocial perspective.

Forty-five-year-old women registered at five general practices were targeted for the research. One hundred and seventy-eight women were sent baseline questionnaires assessing knowledge and beliefs about the menopause, and a number of health-related beliefs and behaviours. Sixty per cent (N=106) of the women responded. Overall, health-related behaviours were not inter-correlated, nor were health beliefs strong predictors of health behaviours. A number of relationships were found which have implications for health services for mid-aged women. The women appeared to have a low level of awareness of empirically derived information about menopause. Beliefs about menopause were complex and multi-faceted, and not necessarily congruent. Intention to use hormone replacement therapy was related to a disease model of menopause, depressed mood and a poorer sense of personal control over the experience of menopause. An as-

sociation between smoking and earlier menopausal changes was found. A complex relationship between lack of exercise, greater body mass index, low self-esteem and perceived barriers to regular exercise was also evident.

Fifty women subsequently participated in a health education intervention in the form of two small group sessions. Fifty-one women acted as control. The post-intervention assessment was carried out three months later, and the follow-up assessment a year later. A third group of women (N=44) was contacted for the first time at follow-up, to control for the effects of completing questionnaires by the first control group.

Knowledge improved and fewer negative beliefs were expressed after the intervention. The proportion of smokers in the intervention group decreased, as did the proportion of women intending to use hormone replacement therapy, though these changes did not reach statistical significance due to the sample size. These changes were maintained at the 1-year follow-up. These outcome measures were unchanged for the control group.

The results are discussed with reference to previous findings for mid-aged samples. The implications for further research are drawn. A range of suggestions for further development of health promotion services for mid-aged women are made.

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CHAPTER 1

MENOPAUSE: INTRODUCTION

1.1 DEFINITION

Menopause - "the permanent cessation of menstruation resulting from loss of ovarian follicular activity" (WHO) - is an end point of a gradual physiological process which normally takes years to complete. Clinicians and researchers conceptualize menopause in stages. The pre-menopause refers to a regular menstrual cycle; the peri-menopause refers to the stage when menstrual pattern has become irregular; and, a woman is said to be in the post-menopause, if she has not menstruated for at least 12 months. Women do not necessarily go neatly from one stage to the next. For instance, some perimenopausal women may become pre-menopausal again.

The term climacteric is also used in the scientific literature, to refer to the period of progressive ovarian decline leading to the peri- and post-menopause. Identification of climacteric changes often relies on retrospective self-reports, but it can also be achieved by testing plasma hormone levels. However, precise dating of the beginning of the climacteric remains problematic.

In Western countries, the average age of the last menstrual cycle is 50.4 years. Though not unequivocal, it is generally accepted that the age of menopause has not changed for the past century (Utian, 1980). Menopause prior to the age of 45

is considered premature. Factors associated with prematurity include family history, smoking, obesity, age of menarche, and so on. An important reason for premature menopause is bilateral oophorectomy. There is some lay confusion with regards to the menopausal status of hysterectomised women with normal functioning ovaries. These women will experience ovarian and accompanying endocrine changes much like women going through natural menopause, but around 30% of hysterectomized women will reach this stage earlier (Utian, 1980).

In lay discourse, the term menopause is at times used to refer to mid-life in a derogatory sense, regardless of the nature of menstrual pattern. Other times it is used interchangeably with the term 'change of life', to refer to menstrual changes preceding permanent amenorrhea.

In this thesis, where the term menopause is used, it refers to the transitional period of menstrual changes leading up to the final menses; where more precise description is needed, the terms pre-, peri- and post-menopause will be cited.

1.2 PHYSIOLOGY

Menstrual functioning is governed by the hypothalamus, anterior pituitary, and ovaries. The hypothalamus produces gonadotropin releasing hormones (GnRH) which in turn

stimulates the anterior pituitary to release the gonadotropins - follicle-stimulating hormone (FSH) and luteinizing hormone (LH). FSH triggers the initial growth of the follicles in the ovary. As the follicles develop, they produce oestrogen. Eventually only one follicle continues to develop which then increases its oestrogen production causing the endometrium to proliferate. When the ovum is released from the follicle, LH transforms the ruptured follicle into the corpus luteum which then produces progesterone as well as oestrogen. Progesterone transforms the endometrium into a secretory organ in preparation for implantation, it also exerts a negative feedback on the release of FSH and LH, precluding further follicular growth. If conception does not occur, the corpus luteum breaks down, oestrogen and progesterone levels decrease, which in turn cause the endometrium to break down resulting in menstruation. With the low levels of oestrogen and progesterone, inhibition of the hypothalamus and the anterior pituitary is lifted, and a new cycle begins.

Changes to the menstrual cycle during menopause are succinctly summarized in Haas & Schiff (1988). The initiating event is a decline in the number of graafian follicles in the ovaries. As a result, the pituitary secretes more FSH to stimulate them and serum levels of FSH become elevated. In addition, the follicles mature irregularly (too quickly or too slowly). This leads both to irregular levels of oestrogens - because of erratic secretion - and to an overall decline in the average

level of oestradiol, the predominant circulating oestrogen in the reproductive years. A shortened follicular phase is common and progesterone is occasionally absent during the perimenopause because of non-ovulation. Near the end of the perimenopause, LH also begins to rise. Finally the endometrium fails to proliferate because of the low average levels of oestrogens, and permanent amenorrhoea ensues.

After menopause, output of ovarian hormones is markedly lowered, but the non-ovarian sources are maintained. The most important of these is oestrone - secreted directly by the adrenal glands, and also converted peripherally from another adrenal steroid, androstenedione. Testosterone secretion is also maintained. Consequently the two main alterations to the postmenopausal endocrine profile is firstly, the absolute level of oestrogen is reduced and oestrone now replaces oestradiol as the predominant oestrogen; secondly, the androgen to oestrogen ratio is increased so that a state of androgen excess exists relative to the premenopause. In contrast to the endocrine instability associated with the perimenopause, changes are stabilized in the postmenopause.

1.3 A HISTORICAL PERSPECTIVE

Analyses of some of the historical developments suggest that contemporary conceptualizations of menopause and women's subjective experience take place within a complex

socio-cultural context. As such there are no universal manifestations of menopause; and experience is relative rather than absolute. The key conceptualizations are summarized here.

Toxic Retention of Menstrual Blood

The historical context of the development of medical theory and treatment in relation to menopause was clearly documented by Wilbush (1988), whose analysis is consistent with present day knowledge of 18th and 19th century social history. According to 18th century European medical theory, menstrual discharge was poisonous and toxins previously excreted through the menses were retained in menopausal women. These toxins were thought to eventually destroy the body from within causing ageing, loss of sexuality and ill health. Treatments to encourage menstrual flow included the application of leeches to the genitalia and cervix, purgation and phlebotomy.

In the late renaissance enlightenment period, such treatments were acceptable to many aristocratic women, for whom the maintenance of youth and sexuality was important. For, once a married lady had produced an heir, freedom to pursue romantic adventures ('amour courtois') was an unwritten convention. In order to exploit this freedom, it was important for the women to stay attractive. Perhaps it is no accident that studies of the climacteric and its treatments in the 18th century were most vigorously and openly pursued in France, where court life was most elaborate and its sexual intrigue

well documented in contemporary literature. French physicians had much sympathy for their older female patients, or 'dethroned queens' abandoned by their lovers; and the dangerous treatments were enthusiastically applied. The theory of toxic menstrual blood was being questioned as early as the end of ^{the} 18th century, but the treatments remained in vogue with the upper classes, especially in the Continent, until mid-19th century.

There are few coherent historical documentations of climacteric symptoms - what descriptions there are seem likely to have been caused by the treatments used (e.g. 'backaches and pains' due to the emmenagogues; 'cholick pains, gripes and looseness' due to purgatives) (see Wilbush, 1988). The relative nature of climacteric experience did not escape the then experts, for French physicians observed that peasant women were unaffected. Indeed, contemporary guides for women healers and midwives did not allude to any such disturbances. It would appear that sharp individual differences in menopause experience existed within European society, even then.

In early 19th century England, where a new class of influential industrialists had emerged, women had few menopausal complaints and physicians deemed treatment as unnecessary. To many god-fearing Non-conformists, the climacteric was a natural event in accordance with god's will. Their cultural religious ethic rose to dominance not just in

Victorian Britain but in North America and the European Continent also. Women's roles were now confined within the family, which were often large. End of reproduction was acceptable to these women, especially when their continuing role in the guidance of growing children was valued. Suppression of sexualitiy might well have contributed to emotional difficulties in younger people, but climacteric women generally accepted their lot. The majority were thought to suffer little discomfort.

Involucional Melancholia

Tilt's book (1857), the first to suggest that climacteric disturbances were caused by ovarian involution, had next to no impact when it was first published. However, social and demographic changes in late 19th century put climacteric stresses firmly on the map again. Families had become smaller, older children were increasingly more likely to migrate for gainful pursuits, and women's social roles and values were changing. Tilt's work was revised and reprinted in the 1880s and other publications on menopause followed. The largely middle and lower-middle class women, who were now the chief sufferers of menopausal complaints, found ready listeners in expanding numbers of willing physicians.

Later Kraeplin (1896) introduced the concept of involucional melancholia, said to be a psychotic syndrome more common in women than in men with onset in the involucional years. This

concept was later discarded by Kraeplin; but the underlying assumption of menopause as a pathogenic process was to remain to this day. Freud (1917) related the loss of reproductive potential to mourning and melancholia. Later another psychoanalyst described the life of her menopausal patients as 'pale and purposeless'; 'resignation without compensation' was said to be the only solution for these women (Deutsch, 1945). In modern psychoanalytic literature, discussion of the menopause is conspicuous by its absence (Ballinger, 1990).

Oestrogen Deficiency

In 1923, Allen and Doisy discovered oestrogens in ovarian follicular fluid. The various ovarian hormones were rapidly isolated during the next decade or so and by the mid-30s these were already being therapeutically assayed. The experimental and therapeutic hormone therapy including treatment of menopausal symptoms culminated in the controversial publication of 'Feminine Forever' by Wilson (1966).

Menopause now is defined as a disease of oestrogen deficiency. Twenty-six symptoms were listed including alcoholism and suicide. Wilson & Wilson (1963) wrote: 'The unpalatable truth must be faced that all postmenopausal women are castrates'. As well as the symptoms, the authors mentioned other 'unwholesome effects' such as 'ugly body contours, flaccidity of the breast'. They warned that 'no woman can be sure of escaping the horror of this living decay'. They furthermore

implied that those women who think otherwise might well be deluding themselves, for the oestrogen-deficient woman is 'incapable of rationally perceiving her own situation'. Replacement oestrogen, the 'youth pill', is said to be needed to avert the 'emotional and physical decline'. This was not only for the women's own good but for the sake of their husbands too, because 'such women will be much more pleasant to live with and will not become dull and unattractive'.

By the early 1970s, half of women aged-55 to 64 and a third of women aged-65 to 74 in the USA were taking oestrogens (McCrea & Markle, 1984). Oestrogen sales and shares soared. In the late 1970s and early 1980s, however, the link between oestrogen use and endometrial cancer was widely publicised and sales dropped markedly. The current debate on replacement hormones are discussed in greater detail in Chapter 3.

Social Construction

Alternative views about menopause and complaints relating to different stages of female reproductive life in general had also developed and began to gain publicity, particularly in the USA. The Boston Women's Health Collective (1976) views menopause as a natural process and socio-cultural forces as the root of women's problems. Ageing women are not valued by society and, menopause and middle-age are particularly vulnerable to negative social stereotyping. This loss of social status and self-esteem, combined with role

re-adjustment, are said to be what give rise to distress, not biological changes. Feminists and social scientists who adhere to this conceptualization reject any reference to deficiency or disease. Non-medical approaches, in particular self-help and mutual support, are advocated as solutions. Menopause is seen as a process which can provide opportunities for personal growth. Social constructionists draw evidence from social and cultural differences in the experience of menopause.

1.4 CROSS-CULTURAL STUDIES

Studies of menopause in different cultures have pointed to the conspicuous lack of universality in women's experience, which concur with historical analyses.

A detailed cross-cultural study was carried out by Flint (1975), who interviewed women of the Rajput caste in northern India about menopause and found that they reported no symptoms or difficulties. Flint attributed the women's relatively trouble-free experience entirely to the raising of social status of ageing Rajput women. When they no longer menstruate, these women emerge from 'purdah' and enter public life, i.e. they are free to visit other households and can join male gatherings to drink, joke and talk. Whereas menopause is 'reward' to Rajput women, who actively look forward to this life stage, it is 'punishment' to Western

women, who are valued mostly for their youth and sexuality. Symptoms and difficulties experienced by ageing Western women are often attributed to adverse socio-cultural factors.

Changes in the social status of menopausal women have been observed in other cultures which abide by a rigid menstrual taboo (Hunter, 1990a). In Bali, menstruating women live by rigid social restrictions while pre-pubertal girls and post-menopausal women had similar privileges as men. Likewise, Lugubara women in Uganda become 'big women' after menopause, when they achieve social equality with men and are able to exercise considerable authority within the family. Some Islamic societies allow women to be unveiled and released from seclusion after menopause. On the other hand, Gisu women in Africa are known to have a higher suicide rate at menopause than at any other time - socio-economic factors specific to that culture mean that these women, who are infertile, are no longer an asset to their husbands and families and are rejected by them (Hunter, 1990a).

A comprehensive cross-cultural comparison can be seen in the work of Beyenne (1986) who studied the menopausal experience of Greek and Mayan women^{in Mexico}. Both groups live in villages that rely on subsistence farming, observe menstrual taboos and have broadly similar social roles. Yet their experience of menopause differs radically. Menopausal women in both groups are pleased to be free of the restrictions of the menstrual

taboo and unwanted pregnancies, but Mayan women are symptom-free while Greek women express anxiety about menopause. Three-quarters of Greek women report hot flushes; some complain of headaches, irritability and insomnia. According to Beyenne, menopause means growing old, lack of energy and general decline to Greek women - postmenopausal women must wear dark clothes as if to symbolize this relative obscurity. However, the two societies also differ in dietary, fertility and climate patterns. These factors may affect the physiology of menopause hence differences in experience also.

The broad differences in bio-cultural parameters pose difficulties for social constructionist explanations. For example, Malay women have an earlier menopause and a later age of menarche compared to Europeans (McCarthy, 1990); and Gambian women are either pregnant or lactating for most of their reproductive life each giving birth to 15-20 children. These are important biological factors which can affect the physiological changes in the climacteric on the whole. Flint & Sami (1990) cautions against over-generalization across cultures and recommends that studies include rural, urban and migrant women of the same country, and that men should be recruited to interview partners.

It would be interesting to monitor any temporal changes of how menopause is perceived and experienced in countries where traditional life-style and values are increasingly under

Western influence. Lock (1980) found that in Japan, menopause had never been accorded any special social significance there and that there is no word for hot flushes. Similarly, Tang (1990) observed that Chinese female factory workers in Hong Kong reported few climacteric symptoms.

In these increasingly westernized societies, it is the well-educated and middle-class women who are most worried about menopause, ie. the groups who tend to be the first to adopt Western values and life-style. If the theory of socio-cultural causality holds, the increasing erosion of traditional values in these societies might see menopause become increasingly pathologized. Somatic and psychological complications observed in the West will become more common, as will medical management. Such changes in perceptions and practices have already been observed for childbirth and breastfeeding in developing countries (Fildes, 1986; Chalmers, 1990).

CHAPTER2: MENOPAUSE: SOMATIC AND PSYCHOLOGICAL ASPECTS

There is an ongoing debate on the symptomatology of the normal menopause transition and this is the focus of this chapter. Present day literature - both expert and lay - still link menopause with a range of problems. Specific symptoms listed in gynaecological texts include low energy and drive, cognitive difficulties, irritability, aggressiveness, nervous exhaustion, anxiety, depression, introversion, marital and sexual problems, headache and insomnia (Dennerstein, 1988).

Studies have tried to gain factual accounts but earlier works were inconsistent due to the differing methodologies. Menopausal status was often self-defined (eg. Neugarten & Kraines, 1965) or defined by chronological age (eg. Bungay et al, 1980). Women were often pre-empted into symptom reporting by being given symptom checklists labelled 'menopausal symptoms' (eg. Blatt et al, 1953) and asked which ones did they have 'during menopause'. Such retrospective reports could have been biased by stereotyped beliefs about menopause, and by other problems of recall accuracy. Another problem concerns the classification of symptoms which sometimes differed from study to study. For instance, palpitations were classified as psychological by Greene (1976), psychosomatic by Neugarten & Kraines (1965) and vasomotor by van Keep (1970). Subjects tended to be clinic attenders and included women with atypical (premature or surgical) menopause, yet findings were

often generalized to the female population as a whole. Finally, causal interpretations had been difficult due to the cross-sectional designs used in earlier studies.

More recent studies attempted to rectify these problems and these studies are the focus of the current review. The main ones are listed in Table 1. The general population samples, prospective designs, definition of menopausal status, and use of standardised measures, have helped to provide a clearer and more consistent picture of the normal menopause transition.

These studies suggest that for the majority of women, the experience of menopause may be rather less remarkable than hitherto imagined. Menopausal status per se appears to predict few changes. All women experience changes to the menstrual cycle - from regular to irregular to cessation - a process lasting an average of 4 years (McKinlay et al, 1992). A large proportion of women also experience some vasomotor changes though for most, these are not unduly debilitating or distressing. Vaginal dryness is reported by just under half of menopausal women, and this symptom can but does not necessarily have a significant impact on sexual behaviour. These were the only areas of change consistently predicted by menopausal status.

Table 1. Prospective General Population Studies of Menopause Experience
(prospective sample sizes in parentheses)

Reference	Location	N	Method
Holte, 1992	Oslo	1886(59)	interviews ~ 12 monthly
Hunter, 1992a	S E England	850(36)	postal surveys
Kaufert et al, 1992	Manitoba	2500(469)	postal surveys + telephone interviews
McKinlay et al, 1992	Massachusetts	8050(2570)	postal surveys + 9 monthly telephone interviews
Matthews et al, 1990	Pittsburgh	--(69+32HRT +101 controls)	interviews, repeated at post-menopause
Collins et al (1994)+	Stockholm	1399 *	postal surveys
Dennerstein et al (1994)+	Melbourne	2000 *	telephone interviews

+ ongoing research - new data emerging.

* follow-up data not yet available.

2.1 VASOMOTOR CHANGES

Description

The lay terminology is hot flushes, described as sensations of heat which spread from the torso or neck up to the face and/or downward to the shoulders and chest. The face may appear red and sweating may occur. Flushes can be accompanied by palpitations. Night sweats - hot flushes at night - may wake the sufferer causing or adding to sleep problems. Hot flushes may occur at any time during the climacteric, sometimes years after the final menses (Ginsburg & Hardiman, 1994).

Aetiology

Hot flushes are associated with endocrine changes (Studd et al, 1977) and can be effectively treated by oestrogen, but the precise mechanism is unknown. Ginsburg and her co-workers have carried out a series of experiments to show that the mechanism of flushing is dissimilar to that of blushing, the key difference is that the former is an inappropriate peripheral heat response, while the latter involves central mechanisms (Ginsburg & Hardiman, 1994).

Observations of skin and core temperature changes, together with endocrine data, allow the current conception of the mechanism to be made (Haas & Schiff, 1988). As a result of declining systemic oestrogen levels, an abrupt downward shift of the hypothalamic temperature setpoint occurs intermittently

for unknown reasons. This results in a misperception that the body is warmer than it should be. The body then initiates its usual mechanisms to disperse heat - vasodilation and sweating - and flushing is experienced.

Prevalence and Experience

Between 60-80% of women are commonly quoted to experience hot flushes at some point during the menopause transition (Avis et al, 1993). There are inconsistencies which are not easily explained. Frequencies and severity vary considerably between women. For instance, 15-25% of premenopausal women also report having hot flushes (Holte, 1992; Hunter, 1992a; McKinlay et al, 1992). Furthermore, postpartum women, who experience acute oestrogen withdrawal, do not complain of hot flushes (Alder, personal communications). It is also interesting that in a number of studies, women reported hot flushes many years after menopause - Oldenhave (1991) found that 40% of Dutch women were still experiencing hot flushes 10 years after their last menses!

The impact of hot flushes on quality of life varies between women. Hunter (1992a) did not find an association between hot flushes and emotional distress but a small proportion of those with the symptom said that they were distressing and interfered with their lives. Some found it embarrassing while others found night sweats more distressing as they can cause, compound, or prolong sleep problems (Hunter & Liao, in press).

In a recent psychological study of hot flushes, two separate dimensions were found (Hunter & Liao, in press)^a. Symptom frequency was unrelated to the 'problem factor'. The latter was based on ratings of the extent to which hot flushes and night sweats were perceived as a problem, how distressing the symptoms were, and the extent to which they interfered with daily life. Problem ratings of hot flushes was positively associated with depressed mood and anxiety, and negatively associated with self-esteem.

Hypotheses of Individual Differences

Holte (1992) found that women who smoked cigarettes were more likely to experience hot flushes. Hunter (1992a) found that two variables, assessed at premenopause, explained 37% of the variance in hot flush reporting during menopause. These were: a history of premenstrual tension; and having had vasomotor symptoms in the premenopause.

Physiological and psychological hypotheses have been put forward. Although there is no apparent difference in the oestrogen levels of flushing and non-flushing women, Campbell et al (1976) did identify a greater diurnal variation of plasma oestradiol levels in the former. Sturdee & Brincat (1988) suggested two possibilities: perhaps the rate of change of the plasma oestrogen levels trigger flushing; or perhaps

there are individual differences in the range of oestrogen levels within which flushes will occur but above and below which they will not.

The role of stress has also been examined. Gannon and coworkers (1987) asked women to record their hot flushes and the occurrence of stressors daily. They found a significant association between hot flushes and stressors for half of the sample. Non-medical interventions incorporating stress reduction techniques have been found to reduce hot flush frequency (Stevenson & Delprato, 1985; Germaine & Freedman, 1985; Hunter & Liao, in press^b) and perceptions of residual flushes (Hunter & Liao, in press^b). It is unclear as to why hot flushes, said to involve peripheral mechanisms, can be reduced by modifying responses of the autonomic nervous system. A recent study found that hot flushes can be preceded by anxiety, and not by absolute or changes in room temperature (Slade & ^{Amees,} in press). It is possible that techniques such as relaxation counter anxiety thereby removing an important antecedent.

Women who lead stressful lives may be more prone to symptom reporting at pre-, peri- or postmenopause, including other symptoms, e.g. PMT. Oldenhave (1991) found that vasomotor symptoms were related to the severity of nearly all non-vasomotor symptoms. Alternatively, Ballinger (1985) suggested that the impact of life stresses might lead to

catecholamine and oestrogen changes and hence vasomotor changes. Women under stress may be more sensitive to minor fluctuation of hormone levels, or they may have a lower threshold of hot flush occurrence (Matthew et al, 1990). These explanations are compatible with the fact that some premenopausal women also experience hot flushes.

2.2 SEXUALITY

Ageing Factors

Sexual problems are commonly reported in clinic samples but there have been few recent, well-designed normative studies. Kinsey et al (1953) interviewed women throughout the life cycle and found a decline with age in incidence and frequency of marital coitus and of coitus to the point of orgasm, but not a decline in masturbation, until well after 60 years of age. Pfeiffer et al (1972) also found a gradual decrease in sexual interest and coital activity with age, particularly between 45 and 55, for both sexes. Similarly in a more recent British study of both sexes, the men in the study reported greater sexual disinterest in their late 40s and early 50s than the women (see Sarrel, 1988). These patterns argue against a simple oestrogen hypothesis as age-related factors may also be involved. However, endocrine changes at menopause can cause vaginal changes which can affect sexual behaviour over and above the gradual age-related effects.

Menopause-specific Factors

In contrast to the temporary nature of vasomotor changes, the gradual changes to the urogenital tract are permanent. Decreased exposure to oestrogen results in diminishing pelvic floor muscle tone, leading in some cases to increased urinary frequency (other factors include childbirth, lack of exercise, obesity). The uterus diminishes in size. Blood flow to the vagina decreases - its walls become thinner, drier and lose some elasticity. The glycogen content of vaginal epithelial cells declines so that fewer lactobacilli grow, thereby altering the PH and consequently the risk of infections. Subjective experience of these changes includes itchiness or dyspareunia. Few studies have reported prevalence of vaginal dryness per se, but focus instead on sexual functioning, since complaint about the symptom is often made in relation to discomfort during sexual activities.

Sexual interest and behaviour in women appear to be relatively independent of oestrogen levels (Hallstrom, 1973; Bancroft, 1983). It has been suggested that testosterone increases and progesterone decreases female sexual interest but again, there is no conclusive evidence (Bancroft, 1983). Studd et al (1977) found no correlation between testosterone and report of loss of libido in postmenopausal clinic attenders. Similar results were reported by Ballinger et al (1987).

Sexual Behaviour of Mid-aged Women

McCoy & Davidson (1985) carried out the first longitudinal study of sexual behaviour in 16 perimenopausal women. Small but significant decreases in sexual activity, sexual thoughts and vaginal lubrication were found, but not in orgasmic frequency or sexual enjoyment. The high attrition rate in this study require the results to be interpreted with caution.

Hallstrom (1977) found a progressive decline in sexual interest across menopausal stages, over and above the effects of age, and a similar trend for coital frequency and orgasm. The decline was also associated with low socio-economic status and psychiatric problems. Vaginal dryness was negatively associated with sexual interest. However, this problem was only reported by a minority of the women and when held constant, the relationship between menopausal status and reduced sexual interest remained significant. This suggests that changes at menopause can directly reduce sexual interest and not just indirectly through vaginal symptoms. However, the women in Hallstrom's study were asked about their sexual behaviour in the last 5-year period and responses might well have been influenced by stereotyped beliefs about the climacteric.

Hunter (1992a) found that 70% of women aged between 45 and 56 reported being sexually active. There was no difference between menopausal status in the 45 to 54 age group, but fewer of the older postmenopausal women aged between 55 and 65 were sexually active. Vaginal dryness/discomfort during sexual intercourse was reported by 40% of postmenopausal women, with the older group (56-65 years) reporting the highest rate. Interestingly, 26% of menstruating women also reported the symptom. Despite these changes, 80% of all the women felt satisfied with their sexual relationships. Cross-sectional data did show a decrease in sexual interest stepwise across menopause stages when age was controlled for, but this was not confirmed by the smaller-scale prospective data. On the whole, sexual difficulties were associated with a number of possible factors including menopause, marital problems, stress and ill-health.

Sexual frequency and intensity decline with age for both sexes. Postmenopausal decrease in oestrogen levels can cause vaginal dryness or sexual difficulties, however these problems can also affect menstruating women. Other factors associated with sexual difficulties in mid-life include socio-economic conditions, relationship with partner, stress and general health. Overall, the majority of older women with partner report being sexually active and express satisfaction with their sexual relationship. Partner unavailability is an

important issue for older women and there are gaps in our knowledge of the role played by partner's sexual functioning in older women's sexual behaviour.

2.3 EMOTIONAL ASPECTS

As discussed in Chapter 1, psychological symptoms have been listed among the 26 symptoms of oestrogen deficiency including 'absent-mindedness', 'irritability', 'depression' (Wilson, 1966). Oestrogen treatment is often claimed to alleviate mood problems of mid-aged women particularly depression (eg. Montgomery et al, 1987). At a recent British Menopause Society Annual Conference (1991), a debate was held to determine whether or not 'oestrogen is a useful treatment for depression'. Though widely assumed, the link between menopausal changes and emotional disturbance remains equivocal.

Background

The word 'uterus' has its root in the Greek word 'hustera'. Its ancient link with emotional instability gave rise to the concept of hysteria in psychodynamic writing. The adjective 'hysterical' means uncontrollably emotional; in a colloquial sense it can also mean mad, wild, funny. Maudsley (1873) wrote: 'activity of the ovaries...has a notable effect upon the mind and body; wherefore it may become an important cause

of mental and physical derangement'. Maudseley's statement still enjoys admiration and praise in modern gynaecological texts as being 'poignant' and 'astute' (Magos & Studd, 1988).

In the reproductive years, there tends to be more reported negative affect in women than in men (Paykel, 1973). Interpretations of these differences are polarised. Biological explanations emphasize female reproductive physiology as causal factors (Magos & Studd, 1988). Social scientists and feminists view this alleged association as a construction based on the power relationships between the sexes; and they re-define women's higher level of morbidity as a consequence of socio-political oppression (Ussher, 1992). Emotional distress at menopause is attributed to women's reaction to being menopausal, which can bring a loss of socially desirable characteristics in the Western world (Kaufert, 1982). The nature and indeed existence of emotional changes at menopause remains contentious.

The emotional disturbance described in the literature and said to be caused by hormonal changes, can be conceptualised as having three levels. The first is a diagnosable mental illness, i.e. involuntional melancholia (Kraepelin, 1897). This was later retracted. The second proposal is that menopause is a syndrome with a cluster of somatic and psychological symptoms. This concept is now also deemed to have little validity but has not disappeared from medical texts

altogether. The third position is a watered-down version of the second - it does not label menopause as a pathological condition but nevertheless adheres to the vague idea that mood problems (eg depression, irritability) are common at menopause due to oestrogen deficiency. The idea that mood changes is part of the menopausal experience currently enjoys a high degree of popularity in lay and scholarly works. Hormonal treatments have often been claimed to solve mood problems (Montgomery et al, 1987).

Psycho-endocrinological Studies

Using single hormone assessments, Coope (1981) found that neither oestrogen nor FSH levels correlated with postmenopausal women's scores on the Beck Depression Inventory (Beck et al, 1961). In a more detailed study, Ballinger et al (1987) took four weekly measures of oestradiol, progesterone, FSH, LH and testosterone levels in pre, peri and postmenopausal women. The General Health Questionnaire (Goldberg, 1972) and standardized interviews were also administered. No significant associations between GHQ scores and hormone levels were observed. If anything, higher GHQ scores (ie. more depressed) were associated with higher oestradiol levels in postmenopausal women. The most recent correlational study was carried out by Avis et al (1993) with a random subsample of the Massachesetts cohort. Depression as

assessed by the Centre for Epidemiological Studies - Depression [CES-D] Scale (Radloff, 1977) did not correlate with menopausal status as defined by oestrogen levels.

There are considerable problems in this type of study due to cyclical and diurnal fluctuations in hormone levels. To obtain an accurate assessment of changes throughout the menstrual cycle in pre and perimenopausal women at least daily samples taken at the same time of the day would be needed.

A randomised controlled study evaluated the efficacy of oestrogen in alleviating depression in postmenopausal women. While superphysiological doses of HRT was found to be superior to placebo in its immediate effect on mood, there was no differences after 4 months (Montgomery et al, 1987). Despite this disappointing result, enthusiasm seemed to have overcome reason, when the authors concluded that 'HRT is a useful treatment for depression at menopause'.

It is conceivable that there is an association between depression and sudden oestrogen withdrawal - as in the case of oophorectomised or postpartum women. Although the psychological impact of these events cannot be separated from the endocrine factors as causal agents, it would be foolish to dismiss the idea that atypical fluctuations of any systemic steroids have emotional or behavioural manifestations.

Nevertheless, even if these associations are established - effects of abrupt endocrine changes cannot be generalized to the gradual changes spanning many years in natural menopause.

Psychiatric Studies

Dennerstein (1988) concluded in her review that there is so far no evidence of a distinct 'major' psychiatric disorder but suggested a prevalence of 'minor' psychological symptoms. This arbitrary dichotomy between major and minor, psychiatric and non-psychiatric, is convenient rather than scientific; whether or not problems attract professional help is often related to healthcare processes and socio-economic factors, rather than intrinsic factors.

Psychiatric studies have used case registers, field surveys and interviews to estimate the prevalence and incidence of psychiatric problems in women across different age bands. The results, not surprisingly, vary from study to study (Goldman & Ravid, 1980). Ballinger (1990), in her review of the psychiatric literature, concluded that the physiological menopause had little impact on 'mental health'. Indeed studies point to a fall in the prevalence of 'minor psychiatric disorders' in the five years following menopause. Events such as changes in family structure, problems with ageing parents, involvement in outside work and reappraisal of future role seemed to have more impact on well-being at this time than physiological factors.

Ballinger (1990) attributed the different viewpoints of psychiatrists and gynaecologists to the fact that the former see many women with negative affect, of whom only a few are menopausal; while the latter see many menopausal women, of whom a large number report negative affect. Currently few people would link menopause with psychiatric problems, except in gynaecological texts. Ballinger's frustration at the persistent claims of 'climacteric depression' (Studd^{etal,} 1977) is keenly felt when she ended her review with: 'It is a tribute to the power of culturally-determined attitudes, media pressure and the promotion of oestrogen sales that this menopause myth persists, despite all the evidence to the contrary'.

General Population Studies

Recent normative studies of women's experience of menopause have yielded more conclusive evidence. A review by Avis et al (1993) convincingly demonstrated the difficulty in upholding the relationship between oestrogen and mood. The studies in Massachusetts, Manitoba and Japan had shared similar data collection techniques developed earlier by Kaufert & Syrotuik (1981). The list of 16 core symptoms for all three studies included diarrhoea and constipation, persistent cough, upset stomach, shortness of breath, sore throat, backaches, aches/stiffness in joints, dizzy spells, lack of energy, irritability, feeling blue/depressed, trouble sleeping, loss

of appetite, hot flushes, and cold/night sweats. To minimize the impact of stereotyping on symptom reporting, the word menopause was not included in the titles of the studies nor in the questions on current symptom experience. Furthermore, the checklist was included in a section dealing with general health rather than menstrual change.

The rates of 'feeling blue' or depressed were generally low, with the highest reported in Massachusetts and lowest in Japan. The highest rates of depressed mood were reported by premenopausal women in the Japanese study and by perimenopausal women in the Massachusetts sample. In the Manitoba sample, there were essentially no differences in mood across the stages. These different patterns argue against a direct link between oestrogen and depression.

Hunter (1992a) did find increased reporting of depressed mood by women who became peri- and postmenopausal. The sample of 36 subjects in the prospective phase of the study was small and results should be interpreted with caution. Hunter's analyses of the cross-sectional and prospective data showed that depressed mood at premenopause accounted for 34% of the variance of depressed mood in the peri- and post-menopause. This factor, together with low socio-economic status and previously held negative beliefs of menopause, accounted for

51% of the variance in peri- and postmenopausal depressed mood. Life-style factors such as stress and lack of regular exercise were also significant factors in depressed mood.

Holte and co-workers (1992) did not find menopause to be accompanied by mood swings or by a deeper feeling of depression among their healthy Norwegian sample. However, they found a reduction in subjective well-being (a sense of happiness and life satisfaction). It is easy to confuse the absence of a sense of well-being with the presence of depression, but the two constructs are not equivalent (Kaufert, 1994).

Summary of Emotional Aspects of Menopause

At present there is no clear evidence to support a direct relationship between depressed mood and menopausal status. Psychophysiological studies have not found a relationship between endocrine profile and mood states. HRT has not been shown to directly improve mood - over and above the confounding effects of the alleviation of vasomotor symptoms and improved sleep. Recent general population studies show that the experience of menopause is unremarkable to the majority of women and that emotional distress is more an exception than a rule. To date, psychosocial factors have emerged as stronger predictors of depressed mood.

2.4 KNOWLEDGE AND BELIEFS ABOUT MENOPAUSE

When asked, women have often expressed neutral and even positive attitudes about menopause, such as relief about the cessation of menstruation. However, negative attitudes are also expressed. Women who have had a surgical menopause, who report current psychological and physical complaints, who are more highly educated, are more likely to express negative attitudes about menopause (Avis & McKinlay, 1991; Hunter, 1992a). Standing & Glazer (1992) found that white middle-class women were more likely to express negative attitudes than a low-income multi-ethnic group, and younger women more so than older women.

Many women believe in a causal link between menopause and emotional difficulties, especially depressed mood and irritability (Avis & McKinlay, 1991; Hunter, 1992). As already discussed, there is no clear evidence to support this assumption from epidemiological research (McKinlay et al., 1992), or from correlational studies of hormonal and psychological variables (Ballinger, 1990; Alder et al., 1992). Furthermore, psychosocial factors have often emerged as stronger predictors of mood problems during menopause (Greene & Cooke, 1980; Kaufert, 1992). Even so, the belief that menopause causes psychological problems remains pervasive.

Indeed it is negative stereotyped beliefs such as this, that predicted depressed mood during menopause (Hunter, 1992). Previously held negative attitudes also predicted higher levels of vasomotor symptoms upon reaching menopause (Avis & McKinlay, 1991), and more psychological complaints in general (Holte et al., 1993). Hunter (1992a) also found that certain negative beliefs to be among variables that discriminated between women who sought medical help for 'menopausal symptoms' and those who did not. This concurs with an earlier finding that negative beliefs about menopause were related to lesser perceived control of health outcome (Sledmere, 1983). Thus beliefs about menopause and health can be important factors in problems and help-seeking during menopause and as such, they warrant further research and intervention.

In general, personal expectations tend to be more positive than generalized beliefs of menopause (Hunter, 1992a). Often attitudes become more positive upon first-hand experience, but not always. Certain stereotyped responses about menopause appear to be routinely expressed, and these are not necessarily modified by personal experience. For instance, when asked, the majority of postmenopausal women considered that their personal experiences of menopause had been better than that of most other women (Holte, 1992; Hunter, 1992a). Thus there seems to be a irrefutable myth about menopause, which is perceived to be a problem, no matter what happens.

Indeed, attitudes to menopause seem extremely complex, at times apparently self-contradictory. For instance, in Leiblum & Swartzman's (1986) study, women agreed that menopause should be 'viewed as a medical condition and treated as such'; yet they attributed any psychological problems to stressful life changes rather than hormonal factors, and expressed a preference for natural treatment options to hormone replacement therapy [HRT]. It is possible that women use different constructions about menopause in different contexts and this too warrants further investigation. Koeske & Koeske (1975) found that some women attributed their negatively perceived behaviours to menstrual symptoms, even when situational factors would have provided adequate explanations.

Knowledge of menopause has generally been found to be low and many women express a need for more information (Roberts, 1991). Surprisingly, postmenopausal women are no more knowledgeable about menopause than premenopausal women (Hunter, 1992a). While published information about menopause has been on the increase, it is seldom free from ageist and sexist biases. Clinic literature on menopause often have to rely on funding by hormone manufacturers. In promoting the efficacy of treatment on women's physical and psychological functioning, menopause is often inadvertently pathologized.

2.5 HELP-SEEKING BEHAVIOUR

In general, women are more likely to seek medical help than men (Verbrugge & Wingard, 1987). Peri- and postmenopausal women are no more likely to seek medical help or use medication than premenopausal women (Kaufert, 1980; McKinlay & McKinlay, 1983; Hunter, 1992a). However, a proportion of women clearly do seek medical help. Help-seeking behaviour in general is predicted by negative health perceptions and health concerns, as well as emotional and somatic symptoms (Mechanic, 1983). Hunter (1992a) found that these variables discriminated between menopause clinic attenders and non-attenders. In addition, clinic attenders reported greater difficulties in coping with these problems and expressed more negative attitudes about menopause.

In the same study, HRT use was associated with having attended a doctor with menopausal complaints but not with demographic, health or psychosocial factors. Thus treatment uptake may be a consequence of healthcare processes as much as anything else. Menopause clinic attenders (nearly all receiving HRT) are characterized by a greater likelihood to have had a

surgical menopause, vasomotor symptoms, emotional distress and negative beliefs about menopause (Hunter, 1992a; Hay et al, 1994).

At present, it is only medical help that is available to women. If and when service provisions include different management approaches, it would be interesting to examine what factors distinguish users of the different approaches. A recent study of choice of treatment for hot flushes found surprisingly few differences between women who chose HRT and those who chose a brief cognitive behavioural intervention (Hunter & Liao, in press^c). Practical constraints were sometimes presented by women as the deciding factor in treatment choice. For instance, among women who wanted help with reducing their hot flushes, some who did not want HRT nevertheless chose it, because taking a pill was easier than attending the psychological intervention. However, the study found that those wanting (any) treatment differed markedly from those who did not want treatment. Low self-esteem, depressed mood, ^{health} locus of control by powerful others, and the extent that hot flushes was seen as a problem (interference with routine, distress were factors that characterized uptake of (any) intervention.

2.6 SUMMARY AND CRITIQUE

Earlier studies of clinic populations were not generalizable to general samples. However, the exclusion criteria of some of the recent general population studies may mean that the women studied were healthier cohorts than a truly random sample. For instance, Holte (1992) did not include hysterectomized women and those receiving HRT; and Matthews et al (1990) recruited women who held drivers license and excluded women with hypertension, diabetes, and those on a number of medications including psychotropics, while Hunter's (1992a) prospective sample was small.

Studies did not address the problems of defining mood problems - 'feeling blue', 'depressed mood' and 'depression' were used interchangeably and different measures were used to assess these. Yet results were often compared as if they were equivalent. Studies of 'attitude to menopause' also did not distinguish between knowledge and beliefs (Kemmm, 1991).

In spite of the stark observations made by cross-cultural studies, none of the general population studies focused on ethnic differences in attitude and experience.

With these limitations in mind, the current evidence suggests that menopause is relatively 'uneventful' for the majority of women and that menopausal status predicts menstrual changes and two symptoms - hot flushes and vaginal dryness. Endocrine

factors are significant in these two symptoms but the large individual differences suggest that non-endocrine factors are also involved. Emotional difficulties reported by some women cannot be explained by menopausal status per se but are associated with a number of psychosocial factors. There is no increase in help-seeking behaviour, which is not determined by symptomatology alone but is also related to psychosocial and healthcare factors. Non-endocrine factors that affect women's experience of and behaviour at menopause include socio-economic status, general health, attitudes, and life-style factors such as smoking, stress and employment.

What these studies tell us is that women do not experience menopause adversely. The traditional view of menopause as a psychopathogenic process is challenged. The presumed presence of certain symptoms is being replaced by the suggested absence of such symptoms. However, these studies cannot claim to have furthered our knowledge about what women find are the salient issues of menopause and mid-life. We probably still know very little about menopausal women. Lack of depression does not equate with well-being. Until recently, no-one has examined work, creativity, adult education, leisure, and so on, in relation to menopause and mid-life. Flint & Samil's (1990) suggestion to interview men's attitudes to menopause and to mid-aged women have also not been taken up.

CHAPTER 3:

HEALTH IN THE POST-MENOPAUSE

While the debate on menopause symptomatology and theoretical explanations continue, menopause is being increasingly established as a public health concern. These issues, and the potential contributions of psychological knowledge and practice, are being addressed in this chapter.

3.1 MENOPAUSE AND PUBLIC HEALTH

Risks for cardiovascular disease [CVD] and osteoporosis increase after menopause. These public health concerns, framed in a biomedical discourse, now dominate the lay and professional literature on menopause and the health of older women. These concerns would need to be addressed by any health education interventions.

So far, health professionals have focused on the long-term use of hormone replacement therapy [HRT] for risk reduction. The behavioural risk factors, such as cigarette smoking, or a sedentary life-style, have been relatively neglected. However, any preventive interventions for menopausal women would be incomplete without communicating the relevant recommendations for health maintenance, which are summarized in this chapter.

3.1.i CARDIOVASCULAR DISEASE (CVD)

Heart disease has often been thought of as a male disease, though there is now increasing recognition that women may be equally affected, albeit at a later age (Manolio & Harlan, 1993). Indeed, after age 65, heart disease is the most likely cause of death for women, accounting for 66,000 deaths in England and Wales each year (OPCS, 1990). It is not clear why premenopausal women are relatively protected against heart disease compared to age-matched men. However, risks rise to match male risks 5-7 years after menopause.

The precise role of menopause-specific changes in the increased risk is not altogether clear. For instance, the Nurses Health Study (Colditz et al, 1987) estimated that fatal and nonfatal coronary disease occurred nearly three times as often in naturally postmenopausal women as compared to premenopausal women matched for age within a 5-year range. When matched within a 1-year age range and matched for smoking habits as well, however, this difference disappeared. Surgical removal of the ovaries was associated with a doubling of coronary risk even after precise adjustment for age and smoking, results which suggest ovarian hormones as possible mediating factors.

A popular endocrine hypothesis is that oestrogen affects the comparatively favourable ratio of plasma concentrations of high-density and low-density lipoproteins (HDL and LDL). [High

LDL and low HDL result in higher total cholesterol which has long been implicated in CVD.] But evidence for this is weak (Crook et al, 1988). Healthy premenopausal women do have lower LDL and higher HDL levels than age-matched men; and women given exogenous ovarian hormones do show positive changes towards this more favourable lipid profile. However, the study of changes in endogenous ovarian hormones does not support the endocrine hypothesis. HDL levels are fairly constant during the female lifespan (failing to rise during puberty or fall during menopause) and LDL increases are age-related rather than menopause-specific. Furthermore, Punonen & Raumaro's (1976) prospective study of bilateral oophorectomy failed to find any significant changes in plasma total cholesterol throughout the 7 months of the study. Oestrogen administered to men has actually been found to increase cardiovascular morbidity and mortality (Blackard et al, 1970).

Nevertheless, at present it is generally accepted that oestrogen is cardioprotective for women, mainly through its beneficial effects on blood fats, although it may have also have other positive effects on blood pressure, glucose tolerance, and body fat distribution (Haarbo, 1994). Other risk factors for CVD include cigarette smoking, a poor diet and lack of exercise, and these will be discussed in 3.2.

3.1.ii OSTEOPOROSIS

This has been arbitrarily defined as bone density below that of a normal population - either age-matched or the young adult population. An alternative has been to characterise the bone density of an osteoporotic population and to define osteoporosis in terms of bone density below a theoretical fracture threshold (Kanis et al, 1990).

The three main sites of fractures conventionally associated with osteoporosis are the spine, hip and wrist; of these hip fractures have the strongest link with mortality. It has been estimated that there are 50,000 hip fractures annually in Britain. Between 1/4 and 1/3 of sufferers will die within 6 months and more than half of the rest will suffer pain or increased disability (Grimley Evans, 1990). The incidence of hip fracture in the population doubles by each decade after age-50 (Lindsay, 1988). There is disagreement as to how much the preservation of bone strength reduces the incidence of fractures. The immediate antecedent to fractures is fall, and a multitude of factors can influence its occurrence, including living conditions, general health, agility, and use of medication such as sedatives and hypnotics.

Bone is continually remodelled throughout life. Men and women reach their maximum bone strength at around age-30, thereafter the rate of bone resorption exceeds that of bone formation resulting in a subtle reduction in mass. Women are more at

risk of osteoporosis for two main reasons: bone mass at maturity is greater for men than for women; and there is an accelerated rate of bone loss in the immediate years after menopause. Around 25% of British women are said to be at risk of osteoporosis, compared to 10% of men (Smith, 1990).

Apart from being female, other risk factors are: Northern European ancestry, family history, life-long low calcium intake, early menopause, sedentary lifestyle, being underweight, nulliparity, alcohol abuse, smoking, secondary causes of bone loss (hyperthyroidism, use of corticosteroids), and high intake of the following substances: sodium, caffeine, protein and phosphate.

3.1.iii PROPHYLACTIC HORMONES

What Is HRT. HRT preparations are either based on synthetic oestrogens alone, or a combination of synthetic and equine oestrogens extracted from the urine of pregnant mares (hence the brand name Premarin). Administration via the oral or transdermal routes are the most common. Oestrogen can also be administered in the form of implants in the abdomen or buttock; each implant typically lasts six months. The vaginal route is available for women who prefer local to systemic oestrogens, though some oestrogen is nevertheless absorbed and circulated systemically. For women with a uterus, a progestin is taken orally for the latter half of the month, to mimic the

natural cycle. Withdrawal bleed takes place monthly to protect the endometrium from hyperplasia (pre-cancer). Hysterectomized women who are not at risk of endometrial cancer receive 'unopposed' oestrogen.

Controversy Over Long-term Use. Although currently the most popular reason for HRT use has been the relief of vasomotor symptoms, promotion of HRT is mainly focused upon long-term use for the prevention of CVD and osteoporosis. A recent meta-analysis of 'observational' studies (ie. not randomized) suggests that oestrogen treatment reduces risks of coronary death in half, independent of age and other risk factors (Stampfer & Colditz, 1991). Lobo (1990) argued that because so many more female lives are lost due to heart disease than to other causes such as breast or endometrial cancers, unopposed oestrogen should be prescribed widely for postmenopausal women even though there may be a slight increase in cancer risk. According to his estimate, 328 lives will be saved from coronary deaths per 100,000 women if unopposed oestrogen is used, as compared to 65 lives saved from cancer if oestrogen is not used. Progestins, on the other hand, was not recommended since they are expected to reduce the lives saved from coronary disease by 117 lives, compared to only 27 lives saved by preventing endometrial cancer.

On the other hand, Posthuma, Westendorp & Vandenbroucke (1994) drew contradictory conclusions based on their review of recent meta-analyses including those of Stampfer & Colditz (1991) and Grady, Rubin, Petitti et al. (1992). They argued that HRT users enjoy a 'health cohort effect'. They have higher social status and better health since, until recently, doctors have been reluctant to prescribe HRT for women with coronary risk factors. It is unclear to what extent the apparent cardioprotectiveness of HRT is due to this 'unintended selection bias'. The authors concluded that the current evidence is insufficient to justify giving HRT to all postmenopausal women, and that a large randomized controlled trial is needed to address this problem. These conclusions are consistent with earlier reviews by Vessey & Hunt (1988) and Khaw (1992).

The efficacy of oestrogen in reducing postmenopausal bone loss is less equivocal. The ultimate aim of preserving bone density is to reduce the risk of fractures and associated morbidity and mortality. According to Weiss et al's estimate (1980), 5 years of postmenopausal oestrogen therapy can result in a 50% reduction in risk of future fractures. More recent estimates suggested that 7 to 10 years of therapy would be necessary to achieve significant risk reductions, but the increased risk of breast cancer becomes a concern with such prolonged use (Khaw, 1992). The rate of bone loss upon withdrawal of treatment mirrors that following natural

menopause. The promotion of oestrogen use for broad sections of the population remains controversial, since only a proportion of women are at risk of osteoporosis (Jacobs & Loeffler, 1992).

Critique of Current HRT Debate. Promotion of prophylactic HRT for all women who have reached menopause remains equivocal (Worcester & Whatley, 1992). There are contra-indications and possible side-effects (Royal College of General Practitioners, 1990). Many women choose not to use it (Jacobs & Loeffler, 1992), and there are immense adherence problems among those who take it up (eg. Purdee et al. 1992). There is even some evidence to suggest that oestrogen can be "addictive" for some women. Bewley & Bewley (1992) produced clinical evidence to show that some women receiving oestrogen implants became psychologically distressed progressively earlier prior to the next implant, ie. when oestrogen levels were still well within the premenopausal range. The authors are conducting further research to investigate factors predictive of addiction.

Lower oestrogen levels in the postmenopause have been singled out as the factor responsible for the increase in risk of CVD and osteoporosis, but the picture is far from simple. For instance, postmenopausal women with more body fat have higher levels of oestrogens (converted peripherally from androstenedione in fat cells). Yet obesity increases rather than decreases the risk of heart disease. Japanese women tend

to have lower oestrogen levels than Caucasian women, yet the former have lower risks of heart disease than the latter (Vines, 1993, p132). Many physiological factors other than oestrogen are implicated in older women's health (Gannon, 1990). Furthermore, factors relating to life-style, such as those discussed below, can also play a part.

The same is true for osteoporosis. There is an inter-generational reduction in bone density (Fogelman, personal communications). British women today are twice as likely to suffer hip fractures as their peers of the same age 30 years ago - a change that is impossible to link to any change in oestrogen levels (Vines, 1993). Oestrogen may be an important factor, but the danger of focusing on a single hypothesis is the neglect of other potentially fruitful ones.

Indeed, even Wilson & Wilson (1963), the great HRT proponents, qualified their claims by saying: 'The estrogenic treatment of older women will inhibit osteoporosis and thus help to prevent fractures, 'as long as they continue healthful activities and appropriate diets' (my emphasis). The facilitation of health protective behaviours should arguably be given as least as much emphasis as HRT promotion. This view is consistent with the prevailing health-care philosophy with its emphasis on prevention, self-care and personal responsibility (Health of the Nation, 1992).

3.2 HEALTH-RELATED BEHAVIOUR [HRB]

The terms behavioural risk factors (eg. smoking), preventive health behaviours (eg. exercise, health screening), or health protective behaviours, proliferate in current health psychology^{literature}. Matarazzo & Leckliter (1988) also used the terms behavioural pathogens and immunogens. In the rest of this thesis, the term health-related behaviour [HRB] will be used to encompass all of these. Where greater specification is required, the terms health behaviour and risk behaviour will be used.

As far as prevention of CVD and osteoporosis are concerned, the behaviours in question include exercise, dietary practice, smoking, alcohol consumption and caffeine intake. In addition, uptake of cervical and breast screening aimed at early cancer detection, are also relevant to the health of mid-aged women, though menopause does not cause increased risk of cancer.

3.2.i PHYSICAL ACTIVITY, DIETARY PRACTICE AND BODY WEIGHT

Physical Activity

An increasing body of evidence suggests that physical activity, be it occupational or recreational, can contribute to good health (Koplan, Caspersen & Powell, 1989). Blair, Kohl, Paffenbarger et al. (1989) provide evidence that physical fitness is associated with lower rates of not just

cardiovascular and cancer mortality but all other causes of mortality. Physical activity is an independent variable in the relative risk of heart disease second only to smoking in importance (Bouchard et al, 1991).

The case for exercise among mid-aged women is strong. Blair (1993) reports that exercise uptake in middle-age significantly reduces the risk of heart disease and stroke. For some time now, aerobic activities are recommended for the prevention of CVD for the population on the whole. Women's cardiovascular responses to exercise are similar to those of men (Haber et al., 1984; Jette, Sidney & Campbell, 1988). Physical activity has also been shown to directly reduces postmenopausal women's risks of developing heart disease (Morrison et al., 1986). Post-menopausal women appear to be able to derive as much health benefit from physical activity as pre-menopausal women (Cowan & Gregory, 1985).

Less well publicised is the role of exercise in the prevention of osteoporosis, which has come from separate lines of evidence. First of all, athletes and dancers have higher than average bone mass (Smith, 1990). Furthermore, even among amenorrheic and hypoestrogenic women with anorexia nervosa, those who were physically active had significantly greater bone mass than a similar groups of inactive anorexic women (Rigotti, Nussbaum, Herzog & Neer, 1984). Controlled trials have found that exercise not only slows down bone loss but can

actually increase bone mass in postmenopausal women, even though only slight gains are achieved (Krolner, Toft, Nielson & Trondeveld, 1983; Dalsky, Stocke, Ehsani et al., 1988; Smith, Smith and Gilligan, 1990).

Notelovitz and co-workers (1988) compared the effects of three types of exercise on the bone density of postmenopausal women who exercised under supervision three times a week. It was found, after one year, that the treadmill walkers gained 0.4% in bone mass while the bicycle, muscle strengthening and no-exercise control groups lost 0.5, 3.8 and 9.9% respectively ($P < .01$ for all exercise groups versus control). When Chow et al. (1987) compared the effects of aerobic with aerobic and muscle strengthening exercise for postmenopausal women, however, there were no difference between the two exercise groups, though exercisers had greater cardiac fitness and bone density than non-exercisers.

It would appear that any type of exercise is superior to no exercise at all for the maintenance of bone strength. Although any promotion of increased physical activities would aim at the slowing of bone loss, weight-bearing exercise has actually been shown to increase bone mass in postmenopausal women, albeit very slightly. Thus weight-bearing exercise may be an important health recommendation for mid-aged women. Finally, muscle strengthening does not appear to accrue further benefits for bone.

A further potential benefit for menopausal women is the positive impact of exercise on mood (Gannon, 1988), found in both normal (eg. Long and Haney, 1988; Slaven & Lee, 1994) and clinic (eg. Doyne, Chambless and Beutler, 1983) samples.

Dietary Practice

Dietary factors can affect risks for heart disease and a more balanced diet based on a reduction in saturated fat, an increase in dietary fibre and anti-oxidants found in fruit and vegetables, are now considered basic aspects of prevention for the population on the whole. For the prevention of osteoporosis, adequate calcium intake is also important.

To be in calcium balance, premenopausal women need 1000 mg of calcium per day, perimenopausal women 1200 mgs, and postmenopausal women 1400 mg (Heaney et al, 1982; Royal College of Physicians, 1989). While it is generally accepted that calcium supplement cannot replenish bone, not being in calcium balance can further deplete bone minerals (Notelovitz, 1988).

A large proportion of British mid-aged women do not consume sufficient calcium (Coope & Roberts, 1990). It is thought that women avoid dairy produce - an important source of calcium - due to concern over weight gain. They may also avoid dairy produce to reduce saturated fat in the diet for

the prevention of heart disease. This is a clear example of apparently conflicting advice which consumers of health information often face.

Body Weight

Obesity is generally considered a risk factor for heart disease. It is not ^a risk behaviour but is included here because it is partly modifiable by HRBs. Currently, a 'body mass index' [weight (kilograms) divided by height (metres) squared] of 25 or more, is considered a risk factor. For women, however, there is some suggestion that android fat distribution (fat deposited around the abdomen) may be a more important risk factor (van Gaal et al, 1989). Furthermore, weight fluctuation is relatively common in women and it has been suggested that weight fluctuation poses greater risk to health than being overweight per se.

In contrast to heart disease, osteoporosis is more common among women who are underweight (Smith, 1990). Greater body weight produces greater mechanical stress on the skeleton and plays an important role in bone formation and function.

Body mass index is related to activity levels and eating habits. Health information might best focus upon increased activities and healthier eating as opposed to a reduction in consumption.

3.2.ii HABITUAL USE OF STIMULANTS

Cigarette Smoking

The highest female death rates in the UK are from cardiovascular disease and cancer (OPCS, 1990) - both strongly related to smoking. Early studies supported the view that the adverse health effects of smoking in men were strong, yet in women were weak. However, most recent studies reveal that this difference does not exist - results of previous studies were due to women smoking less heavily than men (USDHHS, 1980a).

Smoking is a risk factor which poses specific problems for mid-aged women. It produces toxic effects on the ovaries causing the average smoker to have a significantly earlier menopause (McKinlay et al, 1985). This can mean a loss of years of the protective effect that natural oestrogens have on the skeletal and cardiovascular systems.

Examining smoking prevalence by birth cohort reveals that women began smoking more recently than men, with the highest prevalence occurring in women born in the 1930s and 1940s (now menopausal).

Alcohol Consumption

Limited alcohol has been found to have positive effects on blood fats hence reducing some CVD risk factors. Razay et al. (1992) cautioned that, against the possible cardiac benefits

of one or two drinks a day must be balanced the increases in subarachnoid haemorrhage (Stampfer et al., 1988) and breast cancer (Willett et al., 1987), which are associated with moderate alcohol consumption. There is also the risk of moderate drinking becoming heavy with its many risks to physical, psychological and social functioning.

Alcohol can affect risks of osteoporosis in several ways. Alcohol directly inhibits bone formation (Diamond et al, 1990). Heavy drinkers have lower bone mass - an association perhaps confounded by their tendency to also have a poorer diet. And, self evidently, individuals under the influence of alcohol are more likely to fall and risk sustaining fractures.

Caffeine Intake

This is a well-established pattern of behaviour which tends to be life-long. Questions of the potential health implications of this economically and therefore politically important habit are not often considered in a dispassionate manner. Thelle (1988) suggested that pursuing a professional interest in the health implications of coffee is a sure way to 'expose yourself to flak from all corners' (p.223). Troyer & Markle (1984) compared current debates about the possible harmful effects of coffee to the early stages of the identification of cigarette smoking as a health and social problem. Their comment has some credibility when remarks such as the following are considered:

...whereas alcoholism and cigarette smoking have been damned by the medical establishment, the agreeable habit of coffee-drinking has never attracted similar disapproval...if abstinence {from coffee} is going to make us anxious, irritable, lethargic, and physically tense, perhaps it would be foolhardy to stop' (Editorial, Lancet, 1981, p.256).

Caffeine intake comes mainly from coffee and tea. Experiments have shown that the ingestion of a single quantity of caffeine, in an amount approximating one to three cups of coffee, is sufficient to produce acute increases in blood pressure that may last several hours (see James, 1991). Furthermore, epidemiological studies have also identified caffeine consumption as a factor in the development of cardiovascular disease. High caffeine intake - which peak in midlife - interferes with bone metabolism and has been identified as a risk factor of osteoporosis, when other relevant factors are controlled for (Fernandez et al, in press).

Sleep problems can increase in midlife (Hunter, 1990a). Caffeine can delay sleep onset and can adversely affect the quality of sleep (James, 1991). Caffeine and other xanthines can also aggravate stress incontinence through their diuretic action. Stress incontinence affects 10-15% of women in late

middle age and is associated with depleted oestrogen levels, other ageing factors, and to an extent life-style factors (see Hunter, 1990 a).

3.2.iii OTHER HEALTH-RELATED BEHAVIOURS

Women's risks for breast cancer increase with age. Currently one of the preventive measures advocated for mid-aged women are 3-yearly mammography for women aged 50 and above and cervical screening until age-65. The impact of national screening on morbidity and mortality statistics for breast and cervical diseases is currently being evaluated. Breast awareness involving regular self-examination is also promoted as an early detection strategy.

Finally, to maintain good blood supply to the pelvic area, pelvic floor exercise has often been recommended by for women. A recent controlled study in general practice provided evidence that pelvic floor exercise in a matter of months can significantly reduce stress incontinence in older women (Lagro-Janssen et al, 1991). The greatest impact was on mild and moderate symptoms but some positive effects were observed even for those with severe symptoms. Thus this may constitute a valuable health behaviour for mid-aged and older women.

3.3 DETERMINANTS OF MID-AGED WOMEN'S HEALTH-RELATED BEHAVIOURS

Earlier psychological theories postulated that fear might be an effective motivating factor for preventive actions (Sutton, 1982), and that the simple provision of information or persuasive communication concerning certain behaviours and their effects might motivate people to adopt healthy habits (Zimbardo et al, 1977; Ley, 1982). Nowadays, information alone is no longer considered any guarantee of acceptance of the message, let alone attitude and behaviour change (Leventhal & Hirschman, 1982). More complex models have been developed, the main ones of which are described below. Constructs outlined in these models do appear to be relevant for understanding women's HRBs. However, there are conceptual issues specific to women which have not been fully addressed in health research, and some of these are discussed in 3.3.iii.

3.3.i CURRENT PSYCHOLOGICAL MODELS OF HRB: AN OVERVIEW

At present, explanations of individual differences in health-related practices are predominantly based on the social cognition models. It is only possible to give a flavour of the more popular models here. Johnston et al (1994) present the most up to date discussion of the social cognition models which have been applied to health.

Of these perhaps the most well-known is the Health Belief Model (Janz & Becker, 1984), which was specifically developed to explain and predict behaviours in the health context - in particular prevention. Four concepts concerning a person's perceptions of the condition and the action necessary, are central to the model: seriousness of the condition, susceptibility to the condition, benefits of the preventive action, and costs of the action (eg. time, money, personal costs). In addition, internal (eg. a symptom) or external cues (eg. a health message) will increase the likelihood of the action being performed.

Ajzen & Madden (1986) argue that behaviour is influenced by firstly the individual's attitudes towards the behaviour. An attitude comprises a belief (eg. 'exercise can prevent heart disease') and a valence attached to that belief (positive or negative). The second source of influence on intention is 'subjective norms', or perceptions of what important others think of the individual carrying out the action. These influences form the intention to behave in a certain way and intention is said to be closely related to actual behaviour. Thus expressed attitudes and behaviour are not always concordant due to the mediating cognitive processes. For instance, a person may express positive attitudes towards exercise but does not carry it out because in his social world, it is not considered important.

A different model in health psychology is that based on Rotter's Social Learning Theory, which proposes that the likelihood of a behaviour in a given situation can be predicted by the expectancy that the behaviour will lead to a particular reinforcement in that situation and the value of that outcome. One generalized expectancy which has been the focus of much work is locus of control - the generalized expectancy about whether one's own behaviour, or other factors external to oneself, control reinforcements. The construct health locus of control was subsequently developed to predict health-related behaviours.

The original Health Locus of Control [HLC] Scale developed by Wallston, Wallston, Kaplan and Maides (1976) distinguished between 'health-externals' and 'health-internals'. Later Levenson (1975) argued not only that internal beliefs are orthogonal to external beliefs but that chance expectations should be assessed separately from control by powerful others. On that basis, the original HLC Scale was re-developed into the 18-item Multi-dimensional Health Locus [MHLC] Scales, which assess Internality [IHLC], Chance Externality [CHLC] and Powerful Others Externality [PHLC] (Wallston, Wallston and DeVellis, 1978). Lau & Ware (1979) also separately developed a similar multi-dimensional health locus of control measure.

The health locus of control measures were developed to be used in conjunction with a measure of the value of health. Wallston & Wallston (1980, p211) state: 'There is no theoretical reason to expect health locus of control to predict health behaviour, unless it is used in combination with a measure of health value'. However, the extent to which individuals value health is often not directly measured, partly because it has been assumed to be uniformly high (Lau, Hartman & Ware, 1986). It is now recognised that many values such as wealth, social acceptability, pleasure, beauty, or freedom, compete with health. Health value has been assessed relatively - being ranked alongside other values (eg. Kristiansen, 1985). It has also been assessed on its own in a Likert format (Lau, Hartman & Ware, 1986).

3.3.ii MID-AGED WOMEN'S HEALTH-RELATED BEHAVIOURS: A REVIEW

Few studies have specifically considered psychological factors predicting mid-aged women's health-related behaviours. A multi-centre trial aimed at the early detection of breast cancer was an exception. A large cohort of women aged 45 to 64 recruited from the age-sex registers of general practices participated in the research. Calnan (1985) found positive relationships between the range of HRBs assessed ('use of preventive services' such as regular health screening, and 'personal health behaviours' such as smoking), but correlations seldom exceeded 0.2. Social class factors -

younger age, higher education and being employed were amongst the strongest discriminating variables for most of the behaviours studied.

These observations were consistent with those of Pill and Stott (1985) who also examined a range of HRBs in a sample of slightly younger British working class women. The 'procedures' (eg health screening) which emphasize occasional professional involvement, and 'practices' (eg. never smoked cigarettes) which require continual personal commitment, either correlated only moderately or not at all. The authors concluded that health behaviours were independent rather than uni-dimensional. Pill and Stott also found that higher education and being in paid employment were associated with health behaviours. Perceived social support, a general belief that personal action could influence outcome, and an awareness that day to day lifestyle choices could affect health, were also related to health behaviour. Even so, a large part of the variance remained unexplained.

Since one preventive behaviour did not appear to reliably predict another, Calnan (1984) attempted to distinguish between factors that predicted two different health behaviours aimed at the same outcome. Attendance at a breast self-examination (BSE) class and uptake of mammography were two very different behaviours, both aimed at early detection of breast cancer. Participation at the BSE class was

predicted by health beliefs such as perceived susceptibility to breast cancer and perceived control of general health (the more control the less likely to participate), while mammography uptake was predicted by behavioural intention and previous use of preventive services. Again, much of the variance in both behaviours was unaccounted for.

Using data from the same cohort, Calnan & Rutter (1986) further tested the predictive power of the health belief model (HBM). Health beliefs as well as breast self-examination [BSE] frequency and technique were assessed before attending a BSE class and one year later. Non-attenders and control subjects were assessed at the same intervals. The authors reported that 'changes in beliefs were generally poor predictors of changes in behaviour' and that furthermore, prior behaviour was a stronger predictor of subsequent behaviour than beliefs. Perceived value of BSE was also more important than perceived susceptibility. Hence a practical implication for health education was that information would more fruitfully aim at increasing the value of the action, or response efficacy, rather than the perception of susceptibility to the disease.

In support of health belief hypotheses, King (1987) found that non-participants in cervical screening did indeed perceive their risk of cervical cancer as particularly low, although most did say that cervical cancer had serious consequences.

Among the predominantly middle-class sample, she found that it was the older (mid-aged) women who were most resistant to screening and this was associated with beliefs other than those outlined in the HBM. Older women were more likely to attribute cervical cancer to smoking and germs, compared with younger women who were more likely to make causal attributions to gynaecological factors. But by far the strongest predictor of non-attendance was the expectation that the test would be painful, i.e. perception of the smear test was a stronger predictor than perception of the cancer.

Women may be deterred from screening because they see the tests as embarrassing or unpleasant (King, 1983; Eardley et.al., 1985). For example, Leather and Roberts (1985) found, through in-depth small group interviews that older women (aged 45-65) had difficulties in accepting the psychological 'niceness' of examining their breasts. Knowledge of signs and symptoms was poor in the older age groups and King (1983) found that post-menopausal women believed they were no longer at risk of diseases of the reproductive organs.

A recent study examined the knowledge and beliefs of osteoporosis in younger and older women (aged 25 to 54). O'Dea (1992) found that many women in her predominantly middle-class sample lacked 'fundamental knowledge' and had misconceptions of osteoporosis. Women who practised health behaviours perceived the condition to be more severe and saw

themselves as more susceptible to it. Young women (aged 25 to 34) and more alarmingly, women who were post-menopausal, were least likely to adopt preventive behaviours.

In an analogue study, Klohn & Rogers (1991) examined the role of other beliefs in the intention to prevent osteoporosis among female students who were 'at risk' - neither consumed an adequate amount of calcium daily nor performed an adequate amount of weight-bearing exercise. Factors that strengthened intention to adopt preventive practices were perception of the visual impact of the disease, as well as perceived threat of a near-onset. Whether onset was perceived to be sudden or gradual did not have any bearing on motivation. The association between motivation to prevent osteoporosis and perception of visual impact remained strong, whether onset was perceived to be near or distant.

Summary of Current Evidence. Different HRBs in women's mid-life tend to be only moderately related if at all. Constructs outlined in the models described above do appear to partially explain behaviours. For instance, perceived severity and susceptibility, costs (eg. painful procedure) and benefit (value of health action), and causal attributions of diseases, do seem to partially explain some behaviours. However, a large amount of variance remains unexplained, which is consistent with studies of other population groups. Perhaps other perceptions not outlined in the models described

are also important, including perception of disease onset and its visual impact, social support and normative pressure. Finally, social status is a key predictor for health and for health-protective behaviours of women in general (Owens et al., 1987; Pill & Stott, 1985), and specifically for mid-aged women (Calnan, 1985), as for other population groups (Blaxter, 1990).

3.3.iii MID-AGED WOMEN'S HRB: SOME CONCEPTUAL ISSUES

While women feature strongly in mental health research, physical health research has until recently treated women as an undifferentiated category, paying scant attention to potential sex differences in the determinants of health-protective and risk-taking behaviours. For some time much of health promotion resources has been directed to the prevention of heart disease and HIV infection. As the epidemiological evidence has pointed to male and younger populations as most at risk, understandably, relatively little health promotion research and practice has focused specifically on mid-aged women. Consequently our current understanding of mid-aged women's health and risk behaviours is comparatively meagre.

Many of the major epidemiological studies designed to identify risk factors for coronary heart disease have neglected female samples (Healy, 1991; Khaw, 1993). As a result, our

understanding of heart disease in women is at present poorer, and there is emerging evidence that the same risk factors may affect the disease process differently in men and women. This gender bias in medical research and clinical practice appears to have had a domino effect on health psychology research. Models that have been developed to account for preventive health behaviours have often focused on male samples. For example, in a review of psychosocial interventions with cardiac patients, Bundy (1989) listed 45 studies, of which only 14 reported the sexes of the sample. None of the currently predominant social cognition models even mention possible sex differences. As a result, fresh insights gained about the psychosocial aspects of prevention may or may not be directly applicable to mid-aged women.

For instance, Seydel et al (1990) found self-efficacy - the expectancy that the individual was able protect himself against cancer - was a stronger predictor of preventive behaviour for men, while response efficacy - the expectancy that preventive action was an effective means of protection against cancer - was a stronger predictor of the same behaviour for women. The authors concluded that these issues warrant further investigation.

Since the advent of national cervical and breast screening programmes, women's health and risk behaviours have featured more strongly in research. However, interest in women's

health-related beliefs and behaviours have been biased in favour of screening. This is only one type of health-related behaviour, motivated perhaps by different factors from those that underpin actions requiring continual commitment, such as regular exercise.

Another important issue concerns the influence of socio-economic variables. The relationship between social class and health and risk behaviours is well established for the population on the whole (eg. Blaxter, 1990). However, assessment of social class is more complex for women than for men. As women are over-represented in non-manual (clerical) employment categories, their social status is coded according to husband's occupation where possible. This is not possible for a considerable proportion of mid-aged women. Hence studies like the Massachusetts Women's Health Study (see Chapter 2) use school leaving age as index of social status for all women.

Socio-demographic variables other than social class, such as gainful employment, may also be important factors in health outcome. Furthermore, for women, social status and employment may interact in their influence on health outcome. For example, as far as middle-class women are concerned, currently employed women enjoy better health than those not employed, but the trend is reverse for working-class women (Jennings et al, 1984).

Social variables may affect health outcome through intervening life-style factors (eg. stress, role conflict, health-related behaviours). For example, although smoking increased in American women (above age-21) between 1965 and 1979 (see Matarazzo & Istvan, 1985). It is only among the specific high-status professional groups that there are substantially greater percentages of female than male smokers. The complex interplay of psychosocial, behavioural and gender factors in health outcome is at present poorly understood.

Finally, an increasingly prevalent health-related behaviour specific to mid-aged women - HRT use - poses unique conceptual problems for health psychologists. It is not clear whether or not long-term use of HRT can be thought of as a health behaviour much like exercise or avoidance of fatty foods. Health behaviours usually have in common an element of self-care or personal responsibility. For instance, the individual is responsible for the decision to improve his diet, for deciding on the what and how, and for regulating the process. HRT use, however, is controlled and regulated by the medical profession.

HRT is unique in that it is the only prescription drug which can be obtained without any presenting symptoms and for an indefinite period, once a woman has reached menopause, often before. Because it is often prescribed for well persons,

it is doubtful whether or not non-adherence can logically be perceived in the same light as non-adherence to drugs prescribed for chronic diseases, such as insulin for diabetics, or aspirin for cardiac patients.

Health psychologists will need to consider whether or not HRT use is a health behaviour, to be explained and predicted by the range of psychological models much like other health behaviours. Research is much needed to clarify what motivates women to use long-term HRT. For instance, when HRT is prescribed for at risk groups, such as women with low bone density, then adherence should undoubtedly be seen as a health protective behaviour. However, Bewley & Bewley (1992) contends that HRT is 'promoted in the non-medical press and media as a drug that maintains youth' and is being taken up to treat normal ageing processes. Withdrawal from HRT may evoke emotional reactions and social meanings about ageing. Anecdotal evidence from clinicians indicates that a small proportion of women do take up or continue with HRT despite contraindications^{and medical advice}. 'Adherence' under such circumstances may well reflect risk taking rather than health enhancing behaviour.

CHAPTER 4:
THE BIOPSYCHOSOCIAL FRAMEWORK FOR MENOPAUSE RESEARCH AND
INTERVENTIONS

4.1 A CRITIQUE OF CURRENT MODELS OF MENOPAUSE

The Biomedical Model

Physiological changes at menopause clearly have implications for women's health and well-being. The medical profession has highlighted some of the longer-term health issues; lay and expert alike have become more aware of the importance of prevention of osteoporosis, for example. However, the model posits that oestrogen deficiency causes a range of somatic and psychological symptoms during menopause, which have not been substantiated by the general population studies.

The model of biological determinism cannot address the observations of socio-cultural and individual differences and instead has clouded a lot of issues. It helps to perpetuate the social stereotype of the menopause as a time of crisis and maintain the various myths about menopause. Professionals' accounts often reflect social stereotyping hence giving such myths scientific status.

Furthermore, illness is increasingly used to explain everyday experience; the boundary between medical and folk discourses is often blurred, especially with regards to female experiences which tend to be pathologized. There are subtle social taboos which make it difficult for women to express their distress. Any discussion of menstrual or emotional

matters violates social etiquette. The medical discourse gives women a language for expression of their feelings and needs and has probably been popularised by women as much as by professionals. This however is dangerous as it locates the cause of mid-aged women's distress firmly within the female body.

In doing so, extrinsic factors are relatively neglected. A possible consequence of the disease model is that the negatives beliefs may, for some women, become self-fulfilling. Important health problems and/or emotional distress coinciding with menopausal changes, may be misattributed to menopause and remain unresolved resulting in unnecessary distress. Medical treatments may be recommended, when social and emotional support, even institutional changes, may be needed in order to alleviate the distress of older women. Medical management of menopause, much like obstetric practice, may deepen the unequal power relationships between experts and patients. Finally, the commercial interests in viewing menopause as a pathogenic process requiring long-term treatment should not be under-estimated.

Social Construction

The contributions made by social scientists and feminists can be summed up as challenging the biomedical model and thereby increasing awareness of the socio-political biases underlying research and clinical practice. However, these too have

limitations. First of all, social construction explanations dismiss the significance of physiological changes, which can contribute to women's subjective experience. Secondly, they share the assumption that menopause tends to be problematic to women, though for different reasons from those put forward by the biomedical view. Recent epidemiological data do not support the view that menopause is a particularly salient or aversive process. Social construction hypotheses have not addressed individual differences in emotions and behaviours, such as those observed in the complex inter-play between expectations, somatic experience, and help-seeking, in relation to menopause.

At a practical level, social construction models can marginalise the small proportion of women for whom menopause is accompanied by serious biological complications and for whom medical help is the only acceptable solution. It also cannot address the long-term health issues of postmenopausal women. Medical treatment is resisted regardless of the type of symptoms experienced. Self-reports of experiences are not considered as data but dismissed as reflecting social stereotypes.

It is interesting that proponents of both the biomedical and sociological models use health to support their argument. The former view untreated menopause as a serious health hazard

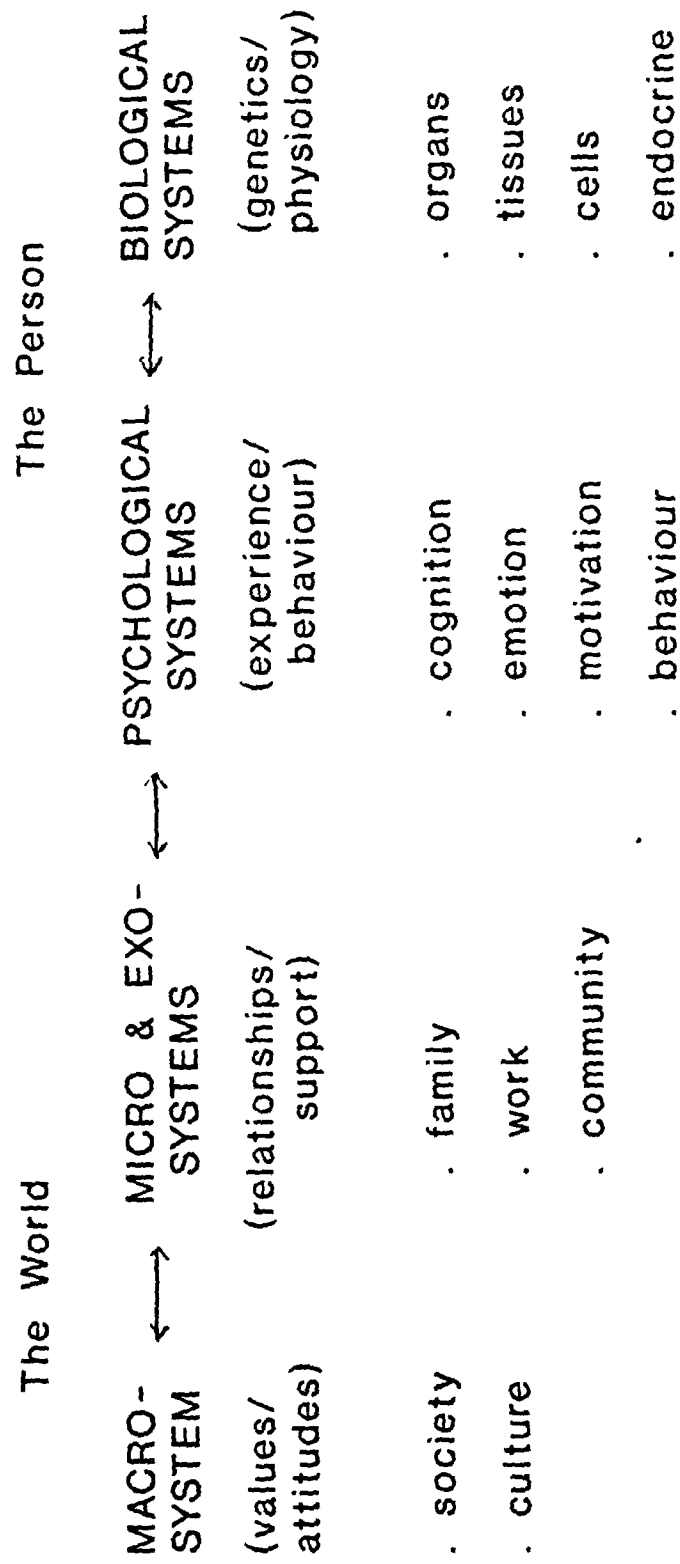
exposing women to risks of cardiovascular disease and osteoporosis, while the latter view exogenous hormones as hazardous raising the risk of cancer.

4.2 THE BIOPSYCHOSOCIAL FRAMEWORK

Since experience and manifestations of menopause are multi-faceted and varied, it is impossible, to develop a neat model that is all things to all women. However, the key dimensions to the variations may be grouped into the socio-cultural context, personal factors, and biological changes. The biopsychosocial framework would allow researchers and clinicians to develop a broader perspective of menopause and to avoid being trapped by polarised positions. In order to ask appropriate questions about menopause, to account for women's experience, and to develop appropriate solutions, the inter-relationships between all these areas, or 'systems', need to be taken into consideration.

Figure 1 represents a modified version of the framework presented by Sarafino (1994). The social systems are expanded and further emphasized by separating into two separate types, which are named after Bronfenbrenner's (1977) 'exosystem' and 'macrosystem'. This is because societal and cultural factors clearly feed into the more immediate social systems such as work and family.

Figure 1.
The Biopsychosocial Framework



If the woman has been depressed prior to menopause (emotion), lacks knowledge about menopause (cognition), and experiences symptoms such as hot flushes (physiology), which are made worse by stressful ^{stimuli} and related behaviour (emotion, behaviour), she may attribute them to a serious health problem (cognition). However, if she has a supportive social network (community), she may be reassured about the temporary nature of the changes (cognition), which may enable her to cope (behaviour) and to ^{autonomic responses to} reduce ~~stressors~~ (physiology) rendering the symptom more manageable. On the other hand, her immediate outside world (work and family systems) may be making too many demands on the individual, or negative social messages about older woman (society) are having an impact on her self-esteem (emotion), the menopause process may be more stressful and symptomatic (physiology), and the individual may seek medical help (behaviour). The doctor (community) may help by prescribing hormonal treatment (physiology), which alleviate the hot flushes (physiology) but the depressed mood (emotion) may persist unless support and understanding (family) follow, or if self-esteem or confidence (emotion) is restored.

Since individuals differ from one another in terms of biological disposition, psychological functioning, and social context, there are many possible scenarios of the menopause process. The framework allows for the wide individual differences in, and greater understanding of, women's experience of menopause and related beliefs and behaviours.

4.3 MENOPAUSE EDUCATION WITHIN THE BIOPSYCHOSOCIAL FRAMEWORK

4.3.i The Importance of Menopause Education

Due to the ever-increasing media interest in hormonal treatment, menopause is now more often openly discussed. Although this is to be welcomed, a worrying problem of linking menopause inextricably with a treatment regime is that it reinforces the disease or crisis model of menopause. For instance, in Kadri's study (1990), 44% of general practitioners felt that anxiety about menopause had increased in the preceding year as a result of media attention, and 82% said that consultation rates had risen in the same period. Thus simply drawing attention to the biomedical aspects is not necessarily helpful at a clinical level. The 'psychological costs' of increased awareness of potential medical problems is well-documented in the screening literature (Marteau, 1992). Concerns about menopause can be addressed by systematic information-giving.

Indeed, menopause is seldom discussed without the mention of heart disease and osteoporosis. One concern is that, as the health^{care} costs of caring for the aged rise, the pressure upon menopausal women to accept HRT could intensify to the point of becoming irresistible (Kaufert et al, 1986). This concern is supported by a Finnish study of the 'push' effect of HRT (Topo et al., 1993). The literature on the costs and benefits of HRT is complex and equivocal. Doctors

understandably have different prescribing habits. In one study, some practitioners gave oestrogen to virtually all their menopausal patients, others were more selective, while all believed absolutely in the correctness of their own approach (Kaufert et al., 1986). These inconsistencies can seem bewildering to women.

The current literature about HRT is complex with many questions unanswered. Women have the right to be informed about the advantages and disadvantages and uncertainties surrounding HRT. Information for the lay person should not simplify the genuine intricacy of the question of whether or not to accept HRT. This is another important goal for health education for mid-aged women.

Psychological factors such as previously held negative attitudes have been shown to predict depressed mood (Hunter, 1992a) and increased vasomotor symptoms (Avis & McKinlay, 1991). Access to accurate information prior to menopause might help women to approach this developmental phase with neutral or realistic attitudes, as opposed to unduly negative expectations. Stress, bereavement, not being in paid work, and being working class, have also been shown to be associated with greater emotional distress during menopause (see Chapter 2). A health education programme in a consultation mode can address complex psychological factors such as these.

Furthermore, teaching skills in managing common stresses and setting relevant personal goals can be part of menopause education and management.

Menopause is not a disease, it is a developmental process which affects all women, which can evoke anxiety in some women (Kadri, 1990) and which women wish to know more about (Roberts, 1991). An appropriate framework for information giving is that which parallels antenatal education. Hunter (1990a) suggested that women prepare for menopause. This may help them to anticipate the process with an open mind, interpret the changes and their feelings in the context of their life, and seek solutions as appropriate.

4.3.ii Menopause Education: Prevention or Empowerment

Currently, health education is generally conceptualized as a disease prevention endeavour. However, the approaches vary and the aims of are not restricted to those involving economic returns such as reduction in the number of hospital beds. The aims of health education can be broad and subtle and include those which can be subsumed under empowerment (Kemmm, 1991). At the most basic, health education aims to equip lay persons with expert information. In so doing it may facilitate perceived control of and equal participation in health-care processes. Antenatal education would fall into this category. Alternatively, health education may aim to increase treatment adherence among those with a chronic disease, as in the case

of diabetes. Population health education campaigns may aim to facilitate early detection of diseases which are not always preventable, as in the case of cervical and breast screening.

Psychologists and other social scientists may be easily drawn into the powerful public health discourse of menopause, to focus on disease prevention. However, the concept of empowerment should be considered fundamental to any attempt to educate women about menopause. Menopause has increasingly been medicalised and expert management is likely to become common. Health education programmes should perhaps aim not only at the expert-focused outcomes such as disease prevalence, but also personal outcomes such as an increase in perceived control of menopause experience, or a reduction in anxiety about menopause, or the preservation of self-esteem of menopausal women. In brief, psychological outcomes are also important (Johnston, 1994).

4.3.iii The Problem of Menopause Knowledge

Chapters 2 and 3 of this thesis have drawn out some of the complexities of the multi-disciplinary research literature on menopause and consequently the problem of attempting to increase women's knowledge. In the context of health education, knowledge and beliefs are often blurred and, since beliefs are seldom culture-free, the objectivity of health information can be tenuous (Kemmer, 1991). It can be particularly difficult to define knowledge of menopause,

because professional interests differ and, epidemiological evidence and clinical opinions often conflict (for example with regard to women's health in the postmenopause and the risks and benefits of HRT). At best, knowledge is consensus of opinions, or the best opinions available. It is important for health professionals to acknowledge the ambiguities of current knowledge about menopause. An awareness of our personal biases would go some way towards providing information which is balanced, giving equal emphasis to the physiological, psychological and social aspects. In the light of the uncertainties, women should be encouraged to consider the evidence and make their own choices.

4.3.iv Menopause Education in a Biopsychosocial Framework

It is particularly dangerous for psychological practitioners to adopt a polarised interpretation of menopausal experience. Whichever one of the two competing camps she enters, she is at risk of alienating a considerable proportion of women. Rightly or wrongly, the medical discourse is often used by lay people to explain behaviour or experience. It is not only male doctors but female patients as well, who use biological explanations for the problems and difficulties of everyday life, during the menopause (Lieblum & Schwartzman, 1986) and at other times. It is not a practitioner's role to indoctrinate women with the 'correct' view of menopause but to

facilitate various interpretations. A framework that would take into account all the complexities is needed, and the biopsychosocial model can be helpful for this task.

The standard approach of printed information is probably not an adequate medium for conveying these complex and interactive issues. A more appropriate method would be a face-to-face approach in small group setting, as in the case of antenatal education. Such an intervention would allow for questions and reflection, for peer support and exchange of opinions, and for individual factors to be considered.

In brief, health education input prior to menopause might aim to satisfy women's request of information, examine attitudes and beliefs, facilitate informed choice regarding treatment, and encourage self-help, peer support and relevant health-related behaviours.

CHAPTER 5:
RATIONALE, AIMS AND DESIGN OF CURRENT RESEARCH

5.1 LITERATURE SUMMARY AND RATIONALE FOR CURRENT RESEARCH

Women's experience of menopause differs widely, as observed in historical and cross-cultural analyses. Historically, menopausal complaints appeared to shift in relation to the social position of older women (Wilbush, 1988). Currently, Western women appear to report a relatively higher symptom levels than women in other cultures. Social constructionist explanations for these differences focus on the fact that in Western societies, women are valued for their youth and beauty, and that ageing women have to contend with the loss of social status (Kaufert, 1982). However, it is difficult to conclude from comparisons between cultures which differ widely in many major bio-cultural parameters, and not just in social structures (Beyenne, 1986).

Within Europe and North America, there are considerable individual differences in the experience of menopause. Until recently, menopause has been linked to a range of somatic and emotional problems. Studies carried out in the past 10 to 15 years, using improved methodology, however, have found that in the general population, menopause per se appears not to have a major impact on the health and well-being of the majority of women (Holte, 1992; McKinaly et al, 1992; Kaufert et al, 1992; Hunter, 1992a). Apart from menstrual changes, the only

changes that can be confidently linked to menopause are vasomotor symptoms and vaginal dryness. Women do not all report these symptoms and, among those who do, only a relatively small proportion report that the symptoms interfere with their lives. However, gynaecological clinic attenders tend to report more severe symptoms as well as emotional problems. Oophorectomy, early menopause, other health complications, and pre-existing psychological difficulties, may have contributed to the higher levels of distress reported by these groups.

At present, studies and management of menopause are dominated by the biomedical perspective, whereby menopause is viewed as an oestrogen deficiency disease causing somatic and emotional symptoms as well as increased risks of cardiovascular disease [CVD] and osteoporosis. However, the extent and way in which lowered oestrogen levels cause or mediate these conditions remains equivocal. The solution so far advocated for symptom control as well as for the prevention of CVD and osteoporosis, is hormone replacement therapy [HRT]. The ultimate objective of long-term preventative strategy is to reduce the prevalence of CVD and fractures. The effects of HRT on morbidity and mortality, however, are estimated from reductions of certain risks rather than direct evidence from randomized controlled trials. While there is reasonable

consensus on the benefits of the treatment for at risk groups, experts disagree as to whether or not it should be promoted for broad sections of the population.

At the same time, there has been a relative neglect of the psychological and behavioural aspects of menopause. Attitudes to menopause can have an impact on symptoms during menopause (Avis & McKinaly, 1991; Hunter, 1992a). Other psychosocial variables such as stress, bereavement, not being gainfully employed, and lower socio-economic status, are associated with greater symptom levels during menopause (eg. Greene & Cooke. 1980; Hunter, 1992a). Some of these variables may be modifiable or preventable.

Furthermore, life-style factors such as the level of physical activities, dietary practice and smoking can have profound effects on health in mid-life and beyond. But understanding of what determines mid-aged women's health and risk behaviours is relatively poor. Mid-aged women have seldom been targeted by behavioural health research. Although this is now changing, current research is biased towards women's uptake of health screening - a very specific type of health behaviours. Few studies focus on what underpin behaviours which require continual commitment, such as smoking cessation, regular exercise, and, as far as mid-aged women are concerned, HRT use. Research is needed to broaden our understanding of

women's continual commitment to health-related practices. This was the objective of the first phase of the current research.

Menopause presents a salient opportunity for health education, especially since many women come forward for information (Roberts, 1991). Information on menopause is complicated by the differing perspectives held by professionals, who may hold different interpretations of the literature and prescribe different solutions. It is proposed that a biopsychosocial framework, which takes into account of the physiological changes, social context, as well as emotional and behavioural factors, can provide a useful guide for the design of interventions.

The timing of such an intervention also requires consideration. Premenopausal women typically express more negative attitudes to menopause than postmenopausal women (Hunter 1992, Holte, 1992; McKinlay et al, 1992). Information delivered shortly before or at the start of the perimenopause may be more likely than other times to generate the desired impact on knowledge and beliefs about menopause. However, women vary in age and pattern of menopause, which makes it difficult to recruit women at the same stage of the menopause process. Since the average British woman has her last menstrual period at age-50, and the transition takes 4 years

on average, ie. from around age-46, women in their mid-forties may be recruited since the majority of them would be pre- or early peri-menopausal.

General practitioners, who at present treat the majority of menopause-related complaints, report that increased awareness of menopause issues can increase women's anxiety and consultation (Kadri, 1991). GPs are at the front line of information provision. The general practice, already the context for much information giving and preventative approaches, is probably the ideal setting for information delivery relating to menopause.

Preparation for menopause, modelled after antenatal education, in a primary care setting, would enable women to gain more knowledge before reaching menopause, examine their attitudes, increase their sense of personal control, and make informed choices about treatment, self-help and health behaviours. Development and evaluation of such an intervention was the focus of the second phase of the current research.

5.2 AIMS OF CURRENT RESEARCH

The overall objective was to carry out a prospective, controlled study to evaluate the outcome of an intervention to prepare 45-year old women for menopause in primary care. Prior to this, a baseline assessment was carried out. This formed a cross-sectional study of mid-aged women's knowledge

of and attitudes to menopause, and prevalence and correlates of a range of health-related behaviours. Thus the research can be conceptualized as comprising two studies - a cross-sectional study and a prospective study. The specific aims are summarized as follows:

STUDY 1

1. Assess the knowledge of and attitudes to menopause in a general sample of 45-year old women;
2. Examine any inter-relationships between knowledge and attitudes, and factors influencing knowledge and beliefs;
3. Assess the women's health-related behaviours and health beliefs;
4. Examine the factors influencing health-related behaviours, particularly exercise participation, due to its role in the prevention of osteoporosis and cardiovascular disease, and the fact that exercise in mid-aged women is a particularly neglected health behaviour;
5. Assess women's intention regarding HRT use upon reaching menopause, and examine factors that might influence decision.

STUDY 2

1. Examine any variables that predict uptake of the intervention;
2. Examine the short- and medium-term impact of a health education intervention to prepare 45-year old women for menopause on knowledge of and attitudes to menopause;

3. Explore any secondary benefits of the intervention on health or risk behaviours, and intention regarding future HRT use.

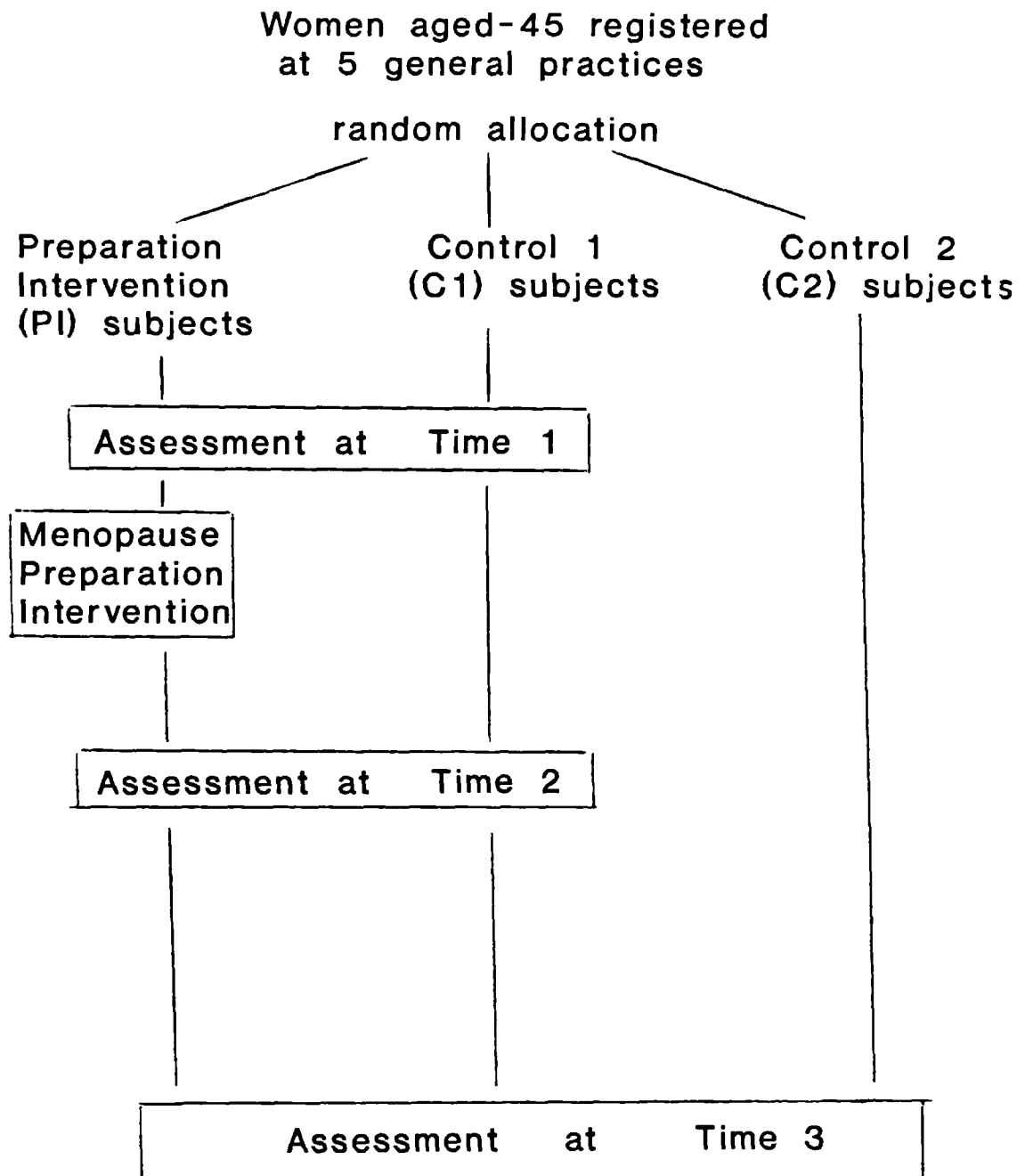
5.3 RESEARCH DESIGN

The design is summarized in Figure 2. Five general practices serving a socially and ethnically mixed population with a total list size of 37,000 had agreed to collaborate with the research. Women registered at the practices who were aged-45 at the start of the study were all targeted for the research. They were randomly allocated to one of the 3 groups. The aim was to recruit 50 women in each group.

Women allocated to the Preparation Intervention (PI) and Control 1 (C1) groups were sent a baseline questionnaire (Time 1). Data from these questionnaires formed the cross-sectional Study 1.

The PI group was also invited to participate in the menopause preparation intervention. The PI and C1 groups were sent a second questionnaire 3 months after the intervention (Time 2), and again a year after that (Time 3). At Time 3, Control 2 (C2) were contacted for the first time with a questionnaire. The rationale for C2 was that the repeated assessments of C1 might constitute a form of intervention resulting in improvements on the outcome measures. If that was to be the case, data provided by C2 - 'naive' subjects of the same age and menopausal status - might help clarify the impact.

Figure 2.
Research Design



CHAPTER 6:

DEVELOPMENT OF NEW MEASURES

A number of measures were needed, in order to assess the variables of interest. In particular, an assessment of knowledge of menopause had to be developed. Furthermore, a range of beliefs relating to menopause were to be assessed, for example positive and negative attitudes, perceived control over the experience of menopause, perceived seriousness of and susceptibility to menopause-related problems. Assessment of a range of health-related behaviours such as dietary practice and exercise patterns, was also required. A large number of variables were of interest to the research and brevity of was an important consideration. To develop appropriate measures, a series of pilot studies were carried out prior to the main research.

The initial pilot work took the form of semi-structured interviews with mid-aged women. The aim was for the author to familiarize herself with the views of mid-aged women on aspects of health, menopause and on menopause preparation, and to decide on the measures to be used for the main research. New measures were constructed and a test-retest reliability study was carried out by post with a different sample of women. Item by item analysis of the test-retest data resulted in some modifications. The modified scales and questionnaires

were then put to a second test-retest reliability study with a different sample. As a result, a number of new measures were established for the main research.

6.1 PRELIMINARY PILOT WORK

Forty-eight women were randomly picked from the two largest of the five general practices that had agreed to collaborate with the research. Equal numbers of women aged 40, 45, 50 or 55, were invited by letter to participate in a research project aimed to improve understanding of women's health in mid-life, by attending an interview at their registered practice. Menopause was deliberately not mentioned in the letter, so that women were less likely to exclude themselves from taking part.

Twenty-six women attended interview: 5 at age-40, 7 at age-45, 6 at age-50 and 8 at age-55. Two-thirds of the sample were from non-manual socio-economic groups; 68% was in paid employment, and 68% had one or more children living with them.

The women were encouraged to talk about their health, life-style, and menopause, in that order. The semi-structured interview schedule can be found in Appendix 1. Their responses helped to develop the measures used in the main studies, and informed the development of the preparation

intervention protocol. Questions which elicited ambiguous responses or different interpretations were either modified or abandoned.

Below are the main points extracted from the interviews which subsequently helped to shape the new measures. Where possible and relevant, examples of verbatim responses (in italics) are included to illustrate points.

6.1.1 General Health

Q. How would you rate your current health:

Some women based their response on the absence of health problems, others on a relatively normal way of life, and one woman on 'fitness'. These discrepancies informed the main studies, in which a number of variables relating to general health were assessed, rather than subjective health status alone (see Chapter 7.2.i).

Fine, good. (Woman aged-45 with no chronic or acute health problems)

Not a hundred per cent fit (Woman aged-40 with no chronic or acute health problems)

Pretty good really...I've got arthritis - cause me more trouble than anything else, it started in.....it's got worse, had my knee operation.....still get problems with immobility though, and pain, it can be OK for days, then it gets bad again, I know it'll be bad tomorrow because of the rain, cold crisp weather's OK....I had high blood pressure, but it's now

under control...breathing problems....now being assessed, like a mild form of asthmabit of eczema on....(Woman aged-55 with a number of chronic as well as acute health problems)

6.1.ii Dietary Practice

It was difficult to form a clear impression of the quality of the diet from the responses to the open question below. Subjective assessment was subsequently avoided. A more specific question enquiring about average frequencies at which different categories of food were used also elicited ambiguous responses. Estimation of averages was subsequently avoided and a checklist of specific foods was developed (see 6.3.iv).

Q. How would you describe your current diet:

I always cook a proper dinner for everyone....yes, I feel good about my diet....

I try to keep it balanced, my husband has pancreas trouble, I try to avoid greasy food....we avoid cream....

Sensible....I can eat anything.

Q. In a typical week, how often do you have:

dairy products (Some women included butter and eggs in this category, others/referred only to milk, yoghurt and cheese.)

meat (This was interpreted as cuts of meat by some, as including processed meat such as bacon and sauseages by others, some women also included all flesh such as fish and poultry.)

vegetables and fruits (Some women included only cooked vegetables, others included salads.)

pulses (This had to be explained to some women.)

high fibre cereals (This was more consistently interpreted to mean whole grain breads and high-fibre breakfast cereals)

6.1.iii Exercise

Assessment of exercise was initially intended to include physical activities in general. Hence, the question on exercise was followed by questions about being active. However, even in the context of a general discussion about exercise, the question 'Do you consider yourself an active person' was perceived by some women as referring to physical activities - as intended, but by others as referring to a busy schedule. Moreover, exercisers gave a wide range of activities from dog-walking and lawn bowling to jogging, confirming the difficulties in quantifying activities. This was hence not attempted in the main research.

Instead, the assessment of exercise participation in the main research was designed only to separate regular (once a week or more) exercisers from non-exercisers (see Appendix 2), though the question enquiring about type and duration was included to increase response accuracy.

During the interviews, some non-exercisers spontaneously gave reasons for not exercising, or explained that they were active in other ways, suggesting that they perceived the need to increase exercise yet had not done so. Scales assessing perceived benefits and barriers of exercise were subsequently developed to try and predict exercise participation in mid-aged women (6.2, 6.3.v). Furthermore, a modified question on non-recreational physical activities was also included in the main research to maintain face validity but responses to this question were not included in the data analyses.

6.1.iv Menopause Knowledge and Attitudes

The women were asked to talk about menopause with questions starting from the general to the specific. Questions that were not particularly discriminating were later either discarded or modified. For instance, most women knew the average age range at which periods stop, this was avoided when constructing the Knowledge of Menopause Questionnaire (see 6.2 and 6.3.i). On the other hand, some women knew about the association between hormonal changes and hot flushes while others did not, this question was retained. Many women made the association between osteoporosis and calcium, consequently questions about osteoporosis were not asked in relation to calcium.

Stereotyped beliefs similar to those observed by Hunter (1992) also emerged. Thus the open question aimed to elicit stereotyped beliefs about menopause was included in the main studies (see 7.2.iii). In addition, the women attributed menopausal problems to many different factors, which could not be easily assessed by questionnaire. Subsequently, an open question tapping causal attributions was included (see 7.2.iii).

Although on the whole, many of the women appeared to think that menopause is or can be a negative experience, their responses were extremely varied and complex and not always unduly negative. It was felt that a questionnaire with a balanced number of positive and negative items was needed, so not to bias overall scores towards the negative. Responses to the questions below subsequently contributed to item selection for the Attitude to Menopause Scale (see 6.2.ii and 6.3.ii).

An attempt was made to assess the women's knowledge of their mother's experience of menopause. Although a few women gave clear accounts, the majority either knew nothing of this, or gave vague answers only. This question was therefore abandoned in the main research.

Examples of verbatim responses to some of the questions asked during the semi-structured interviews:

Q. When I say the word menopause, what comes to mind:

Well, funny women, yes, symptoms, women going through mood changes, depressions, these are mainly what you hear about.

Don't look forward to it, it's the unknown, I feel you should feel like only half a woman....general discomfort of having to go through it, not all doctors are understanding, they can't explain things to you....

I didn't have a menopause, I had a hysterectomy 9 years ago.

It's not the end of everything, but what I've heard from people who've suffered badly, hot flushes, heavy bleeding.... I don't want to be prevented to do what I want to do....

Q. Does menopause affect women's lives:

Depends on how you were before, some people have to have HRT - the tea lady at work is, she didn't like it, it brought her periods back...

Yes, some of them go through a bad time, they get depressed, even mentally ill...small percentage really...

It affects relationships, I'd be surprised if it doesn't, my husband is very good, but he could go moody, he loves kisses and cuddles but then I switch off...

Q. Sometimes terms like 'hot flushes' and 'osteoporosis' come up, would you know what they mean, or what cause them:

I've seen flushes in action...it just lasts a few minutes, I'm told you felt limp afterwards...brittle bones, is it caused by menopause, bodily changes with periods stopping...

That's bone disintegration, isn't it?don't know 'bout cause...changes in minerals, vitamins or something....met someone on holiday with osteoporosis....

As you mention it, I do get hot flushes, it's a joke at home 'undo the back door, Mum feels bit hot', the children were brought up to be open-minded, I can see the funny side of it.

Q. Do you expect to develop them:

I might get hot flushes, but not osteoporosis, that's more serious, it doesn't happen to most women, but mother and her friends had flushes, that seems more natural, so I assume...

Hope not, I've had my share of illness, I'd be cross if...

Yes, in the talk they said if mother or grandmother had a hump, if you're under 5 ft 2 ins, you'd be at risk....

Q. What aspects of the menopause concern women most:

The passing of time, fertility ends, though you may be glad your periods are over, it's a significant time of life, though it doesn't alter your sex life, I'm told.

Ignorance makes them fearful, they hear stories, hope I won't become a depressive....

Some women think they're old, they've reached that stage of life not capable of doing anything, because that's in your mind, they become that.

Q. What do you think is the main reason that some women have no problems and others do:

Maybe lifestyle...if there're lots of stress in life...or there're marriage problems....

The way you're made, like some women suffer from periods and others don't.

Perhaps those more nervous, anxious about different things, or they get easily upset, perhaps they'd have a more difficult time....

It's got to be your mental attitude....

Q. To what extent do you think these problems are preventable or controllable:

Hope some medicine can help...used to have to grin and bear it, but I'm told there're now treatments...

Yes...if some women improve their living conditions...they wouldn't suffer the stress...

I felt the antenatal classes were a complete waste of time, I had a Caesarian anyway, so that didn't do much good.

Q. There doesn't have to be any problems at all, but, should you experience problems during menopause, what are you most likely to do?

Try to cope really...don't know what to expect...just put up with the flushes...I have the room to myself at work so I won't need to be embarrassed....

The answer lies in myself as well, I would put doctors low on the list, he can only give HRT, or tranquilizers....I might use HRT if I'm satisfied there're enough guinea pigs....

If I get hot flushes, I expect something available to stop them, don't believe in drugs but why suffer unnecessarily, don't expect doctors to send me away....my doctor will write what I tell him to write.

6.1.v Preparation for Menopause

Views about preparing for menopause were elicited at the end of the interview. This series of open and closed questions tended to be interpreted unambiguously by the interviewees. The responses are briefly summarized here in terms of the proportions of women who answered in the affirmative or negative to each question. Some examples of the verbatim responses are presented to illustrate some of the qualifications made. In summary:

a) Two-thirds indicated that women did not know much or enough about menopause, the rest were divided between those who were thought that women knew enough and those who were unsure.

b) Over 80% expressed that it would make a positive difference if women were more informed about menopause.

c) Over 80% indicated that women would welcome the chance to find out more about menopause.

d) The women who answered broadly in the affirmative to b and c were asked to suggest how women could be helped to prepare for menopause. All of the women spontaneously suggested some form of face-to-face contact. However, one third suggested an individual approach while the rest mentioned a group context.

e) When asked which aspects of menopause they would want to know more of, virtually all of the women indicated that all aspects are important.

Examples of the verbatim responses to the key questions on preparation:

Q. In general, how much do you think the average woman know about menopause:

Probably not much...just what they heard from their mother...I only know what I've told you...

I know this is going to sound snobbish.....educated women...the more professional women know quite a lot...the less educated...probably don't know much...

Probably not much, there're lots of scare stories.

Q. Would it make any difference if women know more:

It would help, especially if there's something you can do.

Yes, in my situation it would, I'd rather be informed and know what to expect.

Don't really know, sometimes it's bad to know too much about anything 'cos you're searching for symptoms...knowledge is good so far as people realize what's happening is normal, not when something's wrong.

Think so, especially these babies born to perimenopausal women, people have to be told about unprotected sex.

Q. Do you think women would want to find out more about the menopause:

Yes, you'd have to be sensible about it...I would come here for instance, I'd come to a talk or gathering...

Yes on the whole, you'd get some who'd still be embarrassed, but there's more openness now....

Depends on who, some people are open, some are reserved, depends on how close they are to their doctor, how friendly they are....

Q. We're thinking of developing ways to help women prepare for menopause, do you have any suggestions:

Gathering together, lecture, talk, answer questions...

No leaflets, that's just junk mail, better to have personal contact with somebody medical, doesn't have to be a doctor... makes no difference for me but some would prefer a woman.

Run small groups attached to clinics or here, ladies' places for example where they go for their smear, perhaps once a month, occasional would be enough, after all if pregnancy gets told, why not the menopause.

Q. What aspects of the menopause, if anything, would you want to know more about:

The whole thing, true facts.

Perhaps sexual activities, information about that may be important....also diseases, cancer and things like that...

What's going to happen, how it affects them, what they can do to help themselves.

If it affects their routine in life, if they can carry on.

How it affects you psychologically.

The mechanics, what goes on inside your body, what contribute to side effects.

6.2 TEST-RETEST RELIABILITY STUDY 1

The following scales were constructed on the basis of the literature review and the information derived from the above pilot work. The measures were put together and a test-retest reliability study was carried out, to facilitate item selection.

Volunteers were asked to assist with the pilot work by completing an anonymous questionnaire now, and then another one in 4 weeks. These included female staff at the author's work place, friends and acquaintances, some of whom were asked to distribute several sets of questionnaires. The aim of testing the consistency of responses was hidden, but clear instructions were attached to each questionnaire, and

anonymity was retained in order to maximize response accuracy. Although the intention was to have an interval of about one month between the two sets of questionnaires, the interval was longer for some of the women. This was due to the fact that some of the questionnaires were distributed by volunteers to their friends and the author could not control the timing absolutely.

Fifty-Six pairs of questionnaires were distributed. Thirty-eight women responded on both occasions. Respondents lived all over the country ranging from Edinburgh and Cornwall. They were aged between 37 and 50; mean age was 43.14 years ($sd=3.26$); the majority of the women lived with partners who had non-manual occupations. At this stage, it was the consistency of response to each item that was of interest, correlation coefficients of the ratings on the two occasions was calculated for each item using the Pearson method. The results are presented below.

KNOWLEDGE OF MENOPAUSE QUESTIONNAIRE

The conventional method of sampling knowledge is the method summarised by Kemm (1991). Knowledge was assessed by 7 multiple-choice questions. A score of 1 was given to each correct response and 0 for each incorrect response. The correlation coefficient of the total scores on the two occasions was .7534 ($p<.001$). The percentages of women who scored correctly for each item are presented in Table 2.

Table 2. Percentage correct of 7 knowledge items

Items	% Correct	
	test	retest
1) It <u>usually</u> takes: several months/ <i>two to five years</i> /a couple of years/don't know/ for menstrual periods to change from being regular to stopping completely.	21	10
2) It is estimated that: 5%/15%/25%/don't know/ of women will develop osteoporosis (brittle bones).	37	26
3) A hot flush most <u>typically</u> lasts for: <i>1-2 minutes</i> /30 minutes/1 hour/don't know.	58	52
4) After menopause, womens' risk from heart disease is: lower/ <i>higher</i> /unchanged/don't know.	24	31
5) The risk of breast cancer is: <i>increased</i> /decreased/unchanged/don't know/ after long-term use of hormone replacement therapy.	58	48
6) A high-fibre diet: delays osteoporosis /prevents osteoporosis/ <i>makes no difference</i> <i>to osteoporosis</i> /don't know.	58	61
7) Hot flushes are associated with: not having periods/low oestrogen levels/ <i>changes in oestrogen levels</i> /don't know.	66	61

Correct responses in italics.

ATTITUDE TO MENOPAUSE

Agreement with twelve statements - half positively and half negatively phrased - was rated by subjects on 5-point Likert scales (ranging from 1 to Disagree and 5 to Agree). The items and their correlation coefficients over two occasions are shown in Table 3.

MENOPAUSE LOCUS OF CONTROL

Short scales to assess perceived control of menopausal experience by self, chance and powerful doctors were developed because there is some suggestion in the literature that 'condition-specific' health locus of control might be more predictive of uptake of menopause preparation, than the general health locus of control as assessed by Wallston et al's Scales (1978). Six items using the same Likert format as above assess menopause locus of control by self, chance and powerful others. The items and their test-retest correlation coefficients are shown in Table 4.

PERCEIVED SERIOUSNESS AND SUSCEPTIBILITY TO PROBLEMS RELATED TO MENOPAUSE

Seriousness and susceptibility are major concepts of the health belief model (Janz & Becker, 1984). It was thought that when applied to menopausal problems, these concepts might be predictive of behaviours in relation to menopause. Six items - 3 of which assessed perceived seriousness and 3 perceived susceptibility to menopause-related problems - were

rated using the Likert format above, on the two occasions. Individual items and their test-retest correlation coefficients are shown in Table 5.

Table 3. Test-retest reliability coefficients of 12 menopause attitudes.

Items	R	P value
1. Physical attractiveness declines noticeably after menopause	.7490	.001
2. It is good to be free from menstrual periods after menopause	.4836	.01
3. Menopause is an embarrassment to women.	.6160	.001
4. Women are pleased they can no longer become pregnant after menopause.	.9356	.001
5. Menopause is an unpleasant reminder of aging and death.	.7498	.001
6. Women essentially stay the same before, during and after menopause.	.4471	.01
7. Menopause affects women's mind making them depressed and irritable.	.7862	.001
8. Menopause can mark the beginning of a new and fulfilling stage of a woman's life.	.7035	.001
9. Menopause has a decaying effect on women's health.	.4111	NS
10. Women's enjoyment of sexual activities increases after menopause.	.6715	.001
11. Menopause is best seen as part of normal life which most women can deal with.	.5724	.001
12. Menopause is best seen as a deficiency disease which requires special treatment in most cases.	.6611	.001

Table 4. Test-retest reliability coefficients of 6 items assessing menopause locus of control.

Items	R	P value
- If I feel bad at menopause, I shall have the power to make myself feel better.	.6690	.001
- No matter what I do, if I am meant to have a bad time at menopause, I will.	.4941	.001
- My doctor is the person who will be able to help me most during menopause.	.6904	.001
- It is up to me to take care of myself and prevent problems from occurring during menopause.	.6495	.001
- If I am to have difficulties with menopausal symptoms, it would be due to fate.	.6257	.001
- As soon as I reach menopause, I shall consult a medically trained person who will tell me what to do.	.7114	.001

Table 5. Test-retest reliability coefficients of 6 items assessing perceived seriousness and susceptibility to complaints at menopause.

Items	R	P value
How serious would you rate the impact of the following on women's lives:		
- frequent hot flushes	.6939	.001
- osteoporosis (brittle bones)	.7525	.001
- hormone changes during menopause	.7043	.001
Please estimate how likely you are to develop the following:		
- osteoporosis (brittle bones)	.7182	.001
- generally feeling bad at menopause	.6370	.001
- frequent hot flushes	.5958	.001

PERCEPTIONS OF REGULAR EXERCISE

Because of the importance of exercise in the prevention of osteoporosis and cardiovascular disease, and because exercise in mid-aged women is a particularly neglected health behaviour, an attempt was made to develop an exercise beliefs scale. Agreement with 12 beliefs about exercise - half pertaining to benefits and half barriers - was rated by subjects using the same Likert format described above on two occasions. The 12 items and the correlation coefficients of each item over two occasions are presented in Table 6.

Table 6. Test-retest reliability coefficients of 12 items assessing perceived benefits and barriers of regular exercise.

Items	R	P value
Regular exercise keeps my body in trim.+	.8200	.001
There are no local exercise facilities that I can easily use.	.6000	.01
Regular exercise helps me reduce the risks of many diseases.+	.6780	.001
I feel embarrassed when exercising.	.8283	.001
Exercise classes are a good way to meet people.+	.8169	.001
Regular exercise requires too much effort from me.	.6126	.01
Exercise is relaxing because it releases tension and frustration.+	.3119	NS
It is difficult to fit regular exercise in with my routine.	.8682	.001
Regular exercise gives me greater self-confidence.+	-.1169	NS
I get bored easily with exercise.	.7963	.001
I feel guilty if I don't exercise at all.+	.5889	.01
My family suffers if I regularly take time off to exercise.	.6624	.001

+ items assessing perceived benefits; others assess perceived barriers.

6.3 TEST-RETEST RELIABILITY STUDY 2

Based on the results described above and feedback from participants of the first reliability study, and taking into account the existing literature, certain modifications were made. Some items were re-worded, some were discarded, and new items were added. The modified measures and two additional ones were put together and piloted again.

A freelance researcher recruited volunteers, distributed and collected the questionnaires on both occasions in person. Participation was again kept anonymous. The intervals between test and retest varied more consistently between 4 and 5 weeks.

Thirty respondents (100% response rate) all lived in a suburb of the Home Counties. They were aged between 29 and 51 years; the mean age was 37.52 (sd=5.27). School leaving age ranged from 12 to 24 with a mean of 18.86 (sd=3.00). The majority lived with partners who had non-manual occupations.

The aim now was to examine the reliability and internal consistency of each scale as a whole. Pearson's correlational analysis was used to examine the degree of association between total scale scores on two occasions. Where appropriate, Cronbach's alpha was used to analyse the internal consistency

of the scales using data from the first questionnaire. Results of this final part of the pilot work are summarized in Table 7 for ease of reference.

6.3.i KNOWLEDGE OF MENOPAUSE QUESTIONNAIRE

As can be seen in Appendix 3, this measure has now been modified and expanded. It comprises 10 multiple-choice questions extracted from current empirical findings in menopause research. The aim of the assessment is to sample current current knowledge of menopause rather than to attempt a comprehensive assessment of knowledge. As this is a key outcome measure, the questionnaire was deliberately made difficult to allow room for improvement over several testing occasions in the main research. A score of 1 was given to each correct response and 0 for each incorrect response. Thus the minimum total score was 0 and maximum 10. Test-retest reliability of the total score over a 1-month interval was .70 (N=30).

6.3.ii ATTITUDE TO MENOPAUSE SCALE

This 10-item scale now comprised 5 neutral/positive and 5 negative items (Appendix 4). Agreement with each item was expressed on a 5-point Likert scale. For the positive items, scores ranged from 1 for Disagree to 5 for Agree. Scoring of the 5 negative items were reversed. The summary score was the mean of the 10 ratings, hence the lowest possible score was 1 and highest 5, with higher scores reflecting a more positive

attitude. Test-retest reliability of the total score was .84 ($p < .001$); internal consistency assessed by Cronbach's alpha was .71.

6.3.iii MENOPAUSE LOCUS OF CONTROL SCALES

Perceived control of menopausal experience by self, chance and powerful doctors was assessed by 6 items (Appendix 5). Agreement with each item was again rated on 5-point Likert scales ranging from 1 for Disagree and 5 for Agree. Test-retest correlation coefficients and Cronbach's alpha of the 3 dimensions were respectively: internal .57 ($p < .001$) and .54; chance .69 ($p < .001$) and .58; powerful others .76 ($p < .001$) and .75 ($N = 30$). Thus the internal dimension is psychometrically the weakest. As there was no time to further develop this scale, it was used in the main research and interpretation of any significant findings would have to be made with this in mind.

6.3.iv SERIOUSNESS AND SUSCEPTIBILITY SCALES

These were assessed using 6 items rated on 5-point scales as above (Appendix 6). Half of the items assessed perceived seriousness and the other half perceived susceptibility to menopause-related problems. Test-retest reliability of the summary seriousness score was .79 ($p < .001$), internal consistency was not assessed since the items are not expected to relate to each other. Test-retest reliability of the summary susceptibility score was .39 (ns) and internal

consistency assessed by Cronbach's alpha was .77. Surprisingly, the susceptibility scale was not reliable, even though during the first test-retest study, the susceptibility items were reasonably reliable. As there was no time to further develop this scale, it was included in the main research, though any significant findings would have to be interpreted with these problems in mind.

6.3.v REGULAR EXERCISE: PERCEIVED BENEFITS AND BARRIERS

Ten items were now included; half of them elicited perceived benefits and half perceived barriers of exercise participation (Appendix 7). Each item was rated as above. The benefits and barriers scores were the average ratings and ranged from 1 to 5. Correlation of the test and retest scores and Cronbach's alpha value for perceived benefits were .83 ($p < .001$) and .70 respectively; and for perceived barriers .91 ($p < .001$) and .65 respectively.

6.3.vi ASSESSMENT OF DIETARY PRACTICE

Food checklist. A food checklist with items drawn from Kristal et al (1990) was used to assess dietary habits qualitatively (Appendix 8). It comprised 13 currently recommended food categories [RFC] (e.g. fruit, fish), and 13 non-recommended categories [NRFC] (e.g. confection, deep-fries). Subjects ticked the categories consumed the day before, the total number of recommended food categories used was the score (lowest possible 0, highest possible 13).

Vegetable portions consumed on the same day were also listed to enable a count of the total number of portions consumed, as an additional indication of the quality of the diet.

Caffeine Intake. Tea and coffee intake (excluding herbal and decaffeinated varieties) for the preceding day was also recorded.

Estimated Calcium Intake. This was estimated from the reported quantities of dairy products consumed the day before, plus 300mgs estimated to be the mean daily calcium content of the average diet devoid of dairy produce (Ettinger, 1993).

The test-retest data for the dietary measures are presented in Table 8.

6.3.vii **SHORT SELF-ESTEEM SCALE**

For the main research, current physical and psychological well-being were to be assessed using the Women's Health Questionnaire [WHQ] (Hunter, 1992b) standardised on mid-aged women. However, the 2-item Attractiveness subscale of the WHQ is not an adequate measure of self-esteem. It was decided to develop a short self-esteem scale which could be attached to the WHQ as part of the same measure, rather than to include yet another scale such as the well used Rosenberg's (1965) self-esteem scale, which in any case was developed for use with adolescents.

Table 7. Summary statistics of the new measures

Measures	Test means (sds)	Retest means (sds)	R	P value	Cronbach's alpha
Knowledge of menopause questionnaire	3.28 (1.79)	3.34 (2.24)	.70	.001	--
Attitude to menopause scale	3.34 (0.59)	3.34 (0.57)	.84	.001	.71
Menopause locus internal	3.43 (0.93)	3.53 (0.74)	.57	.001	.54
chance	2.29 (1.08)	2.29 (1.07)	.69	.001	.58
powerful others	3.10 (1.10)	3.40 (1.14)	.76	.001	.75
Seriousness	4.23 (0.49)	4.15 (0.49)	.79	.001	--
Susceptibility	3.28 (0.85)	3.03 (0.91)	.39	NS	.77
Exercise benefits	4.28 (0.74)	4.32 (0.67)	.83	.001	.70
Exercise barriers	2.66 (0.94)	2.50 (0.88)	.91	.001	.65
Dietary indices:					
Healthy Foods	5.48 (1.66)	5.79 (2.51)	.70	.001	--
Non-hthy Foods	3.10 (1.80)	3.17 (1.58)	.55	.01	--
Vege.portions	1.83 (1.49)	2.28 (1.25)	.45	.01	--
Caffeine use	4.48 (2.31)	4.76 (1.83)	.64	.001	--
Calcium	442 (197)	416 (212)	.70	.001	--
Self-esteem	4.17 (1.00)	4.45 (0.74)	.62	.001	.47

Five items - self-constructed and drawn from some of Rosenberg's items - were included in this scale (Appendix 9). The WHQ method of scoring was adopted. Subjects ticked one of the following responses for each item: Yes-Definitely / Yes-Sometimes / No-Not Much / No-Not At All. For the positive items (1, 3, 5), a score of 1 was assigned to the Yes responses, and a score of 0 to the No responses. Scoring was reversed for the negative items (2, 4). Thus the minimum and maximum total scores were 0 and 5 respectively, with higher scores reflecting higher self-esteem.

The 30 pilot subjects completed this scale twice as well as Rosenberg's self-esteem scale on the first occasion. In addition, 15 different women also filled in this scale and the Rosenberg on one occasion. Thus a total of 45 subjects provided concurrent validity for the new scale. Test-retest correlation of the total scale scores on the two occasions was .62 ($p < .001$), Cronbach's alpha .47 ($N=30$). The correlation between this scale and the Rosenberg was .78 ($p < .001$) ($N=45$).

6.4 CONCLUSIONS OF PILOT WORK

The pilot work was carried out in stages with different samples and involving semi-structured interviews and two test-retest reliability studies. As a result, a questionnaire assessing knowledge of menopause was constructed. Furthermore,

scales assessing overall attitude to menopause, and specifically, perceptions of control over menopausal experience, the seriousness of and susceptibility to menopausal problems, were also established. Of these, the internal menopause locus of control scale was only moderately reliable and internally consistent, and the susceptibility measure was not reliable though internally consistent. As there was no time to further develop these measures, they were retained for the subsequent studies, though results would have to be interpreted with caution. Summary statistics of the final pilot study are presented in Table 8.

Among the range of health behaviours that could be assessed using self-reports, exercise was of particular interest. Scales assessing perceived benefits and barriers for regular exercise were developed.

It was also decided to sample dietary practice using a simple checklist. The use of healthy food groups was found to be fairly stable over two occasions but not the use of the unhealthy foods. The checklist was retained for the research but it was decided that only the use of healthy food categories would be taken as an index of current dietary practice.

Within the constraints of the research, it would not have been possible to obtain exact values of calcium intake but a way of estimating this variable was found to be fairly consistent over two occasions and this was adopted for the main research. Caffeine use was calculated in terms of the number of cups of tea and coffee per day; this measure was fairly consistent over two occasions and was also used for the main research.

Finally, a short self-esteem scale was developed. This scale had reasonable test-retest reliability and correlated highly with Rosenberg scores. This scale was presented as part of the Women's Health Questionnaire in the main research, as an additional measure of current well-being.

CHAPTER 7:

STUDY 1. KNOWLEDGE & BELIEFS ABOUT MENOPAUSE AND HEALTH-RELATED BEHAVIOURS OF 45-YEAR OLD WOMEN

7.1 SUBJECTS AND PROCEDURE

All women born in 1946 (then aged-45) registered at the five general practices in South London, who had not participated in previous pilot work, were targeted for the study (N=228). Fifty women were randomly removed from the list - reserved for later contact in the prospective phase of the study. The remainder (N=178) were contacted by letter written in letter-headed paper of the appropriate practice and co-signed by a GP of the practice. Ethical approval had been obtained from the relevant committee (Addendum 1) and the women had previously been notified by letter of the research and had been asked to opt out of being contacted if so wished.

The women were asked to participate in a women's health study by completing the enclosed 'Women's Mid-life Survey' (Addendum 2). The letter emphasized the importance of accurate and honest responses. Subjects were informed that there would be follow-up contacts. A stamped addressed envelope was provided. All women were asked to contact the authors to arrange help with reading or writing as required. Non-respondents were sent a reminder a month later.

7.2 MEASURES

7.2.i SOCIAL AND HEALTH VARIABLES

Socio-demographics and General Health

Information on the following was included: marital status, age on leaving full-time education, ethnic group, own and partner's occupation, number of children living at home. Subjects rated their general health on a 4-point scale (poor, fair, good, very good), and reported any current major illness or disability, prescribed medication and the number of times a doctor was consulted in the past month.

Gynaecological Information

Menopausal status was defined by menstrual criteria. Premenopause was defined by a regular menstrual pattern; perimenopause by an irregular pattern with menstruation having occurred in the past 12 months; and postmenopause by amenorrhea for at least 12 months or oophorectomy. Hysterectomized women with ovaries conserved were classified as pre-menopausal. The menopausal status of women on HRT was not defined, since these women might menstruate regularly yet be in the peri or postmenopause. Further questions assessed current menstrual symptoms, method of contraception, contraceptive pill ever use, past gynaecological surgery, obstetric problems (eg. miscarriage, still birth, postnatal distress).

Current Physical and Psychological Well-being

Women's Health Questionnaire (Hunter, 1992b) was used to assess current symptom state. This scale has been standardised on mid-aged women and in its entirety comprises 36 items in 9 subscales: depressed mood, anxiety/fears, somatic symptoms, sleep problems, vasomotor symptoms, sexual behaviour, menstrual symptoms, memory/concentration, and attractiveness. The 2-item attractiveness subscale was omitted in the current research (replaced by the self-esteem scale below). All WHQ items are scored 0 or 1. Subscale scores are derived by adding the scores and dividing by the number of items, thus the minimum score for each subscale is 0 and maximum 1.

A 5-item self-esteem scale was included (see 6.3.vii). Each item was scored 0 or 1, thus the minimum and maximum scores were 0 and 5 respectively, with higher scores reflecting higher esteem.

7.2.ii KNOWLEDGE OF MENOPAUSE

The Knowledge of Menopause Questionnaire was composed of 10 multiple-choice items; the minimum and maximum possible scores were 0 and 10 respectively (detailed in 6.3.i).

Women also self-rated their knowledge of menopause on a 4-point scale: poor, fair, good, very good. They were asked whether any their knowledge had come from any of the following

sources: mother, peers (friends, relatives), mass media (radio, magazines, television), books, and health channels (doctor, nurse, clinic).

7.2.iii BELIEFS ABOUT MENOPAUSE

Stereotyped Beliefs

These were elicited by an open question: 'What changes, if any, do you think most women experience during the menopause?' The question had been used in previous research where responses were content-analysed and classified into categories. A category is scored 0 or 1 depending on whether it is present in the response to the question or not. The stereotype summary score was obtained by adding the negative categories scored and subtracting the neutral/positive category scored. The inter-rater reliability was shown to be above 90% and high stereotype scores in premenopausal women were predictive of depressed mood during menopause (Hunter, 1992a).

Causal Attributions

Attributions for menopause-related complaints were likewise elicited by an open question: 'What do you see as the main factor that determines whether a woman will have no problems or have a bad time at menopause?'

Responses were content-analysed and classified into categories as for the stereotype question, though this question has not been used in previous work.

Attitude to Menopause Scale

This comprised 10 items, agreement with which was expressed on 5-point scales. For the 5 positively phrased items, scores ranged from 1 for Disagree to 5 for Agree; scoring of the 5 negatively phrased items was reversed. The summary score was the mean of the 10 ratings (minimum 1, maximum 5), with higher scores reflecting a more positive overall attitude (see 6.3.ii for more details of scale development).

Menopause Locus of Control Scales

Six items were used to elicit perceived control of menopause experience by internal [IMLC], chance [CMLC] and powerful others [PMLC] factors. Agreement with each item was rated on a 5-point scale, with a higher score reflecting greater agreement (detailed in 6.3.iii).

Perceived Seriousness and Susceptibility

Six 5-point items were used to elicit perceptions of the seriousness of (PSR, 3 items) and personal susceptibility to (PSC, 3 items) menopause-related problems. The items were rated and scored as above (detailed in 6.3.iv).

7.2.iv HEALTH-RELATED BEHAVIOURS

Women were asked to provide current information about themselves on the following:

Smoking: daily number of cigarettes used

Alcohol consumption: units of alcohol per week on average (guidelines provided for estimation)

Body mass index [BMI]: height and current weight

Cervical screening: date of last smear test

Breast self-examination [BSE]: monthly (y/n)

Dietary practice: Food checklist (see Chapter 6)...

Calcium intake: estimated from quantities of dairy products consumed the day before, plus 300mgs

Caffeine intake: number of cups of tea and coffee drank the day before (excluding herbal and decaffeinated varieties).

Participation and Perception of Regular exercise

Frequency, duration and type of any exercise were assessed (Appendix 2). An open question attempted to elicit the exercisers' main reason(s) for participation. Perceptions of exercise were assessed by a 10-item scale (detailed in 6.3.v). Five items measured perceived benefits and five perceived barriers. Each item was rated on a 5-point Likert scale. Summary scores on exercise benefits [EBN] and barriers [EBR] are the average ratings of the 5 items and ranged from 1 to 5.

7.2.v INTENTION TO USE HRT

This was assessed by a multiple-choice question: 'How do you think you will feel about HRT when you reach the menopause?'; (followed by an open question to tap reasons for responses)

I definitely won't want HRT*

I'd rather not have HRT but would consider it*

I'd like to have HRT but have some concerns*

I definitely will want HRT*

I am already on HRT

Don't know

**Please state the main reason for your choice:*

7.2.vi PERCEIVED CONTROL AND VALUE OF HEALTH

In order to assess whether beliefs about menopause were related to overall beliefs about general health, it was decided to include the Multi-dimensional Health Locus of Control (Wallston, Wallston & DeVellis, 1978). The 18-items in 3 subscales measure perceived control of health outcome - by self or internal factors [IHLC], chance [CHLC], and powerful others [PHLC]. Each item was rated on a 6-point Likert scale. Scores on each subscale range from 6 (min) to 36 (max).

As health locus of control measures were developed to be used in conjunction with a measure of the value of health (see 3.3.i), the Health Value Scale (Lau, Hartman & Ware, 1986) was also selected for the research. Each of the 4 items was rated on a 7-point Likert scale; scores ranged from 4 to 28. The brevity of this scale was an important consideration, as was its Likert format similar to that of the new measures.

7.3 HYPOTHESES

The hypotheses relating to knowledge and beliefs about menopause were as follows:

- A) Knowledge about menopause was derived mainly from the mass media.
- B) Most women would express negative stereotyped beliefs, in particular the belief that emotional problems and depression are consequences of menopause.
- C) Women would express both positive and negative beliefs.
- D) Knowledge and beliefs were not significantly inter-related.
- E) Women with higher social status would have more knowledge and also more negative beliefs.
- F) Negative beliefs correlate with current symptom state.
- G) Negative beliefs about menopause correlate with health locus of control.

The hypotheses relating to health-related behaviours were as follows:

- H) The health-related behaviours will not be strongly inter-related.
- J) Health behaviours (eg. regular exercise) are positively associated with higher and negatively associated with lower social status; while the relationship is reversed for risk behaviours (eg. smoking).
- K) Health-related behaviours are associated with health status.

L) Health-related behaviours are associated with current symptom state.

M) Health-related behaviours are related to health locus of control and health value.

N) Regular exercise is related to perceived benefits and barriers of exercise.

The hypotheses on intention regarding future HRT use were:

P) Most women have not formed an opinion regarding future HRT use.

Q) HRT intention is not strongly related to other health-related behaviours.

R) HRT intention is associated with socio-demographic and health factors.

S) HRT intention is not associated with menopause knowledge.

T) HRT intention is associated with beliefs about menopause - a positive intention is associated with negative beliefs, and vice versa.

U) HRT intention is related to current symptom state.

7.4 PLAN FOR DATA ANALYSIS AND PRESENTATION OF RESULTS

The following sets of variables are of interest as dependent variables: menopause knowledge and beliefs; health-related behaviours; and intention to use HRT. The following sets of variables are of interest as independent variables: socio-demographic variables; menopausal status and other

gynaecological variables; health and well-being including WHQ and self-esteem; perceived control and value of health. When HRT intention is examined, menopause knowledge and beliefs and health-related behaviours will also be examined as independent variables.

Initially, a range of univariate parametric and non-parametric statistical techniques will be used to explore relationships between variables. After these initial analyses, two variables of particular interest will be examined in greater detail using regression analyses: regular exercise, and intention to use HRT.

In the light of multiple analyses, only those results significant at 1% level or less would be accepted as significant findings.

7.5 RESULTS

7.5.i SAMPLE CHARACTERISTICS

Of the 178 women contacted, 106 women returned the questionnaires giving a response rate of 60%. Five questionnaires were excluded because of missing data.

The medical notes of 65 out of the 72 non-respondents were available for examination, to elicit possible reasons for non-response. Thirty-two per cent of the non-respondents were from various ethnic groups. The rest included women who were

already postmenopausal (e.g. oophorectomized) and/or having H.R.T.; women who had a serious/chronic illness (e.g. hypothyroidism, stroke); and women with chronic and/or current psychosocial difficulties. No obvious potential reasons for non-response were observed in the notes of 9% of the women.

Socio-demographic characteristics are presented in Table 8. About half of the women had left full-time education aged 16 years or before, the mean age was 17.3. Social class was coded from partner's or own occupation (OPCS, 1981). There was a slight middle-class bias, though all social classes were represented. The majority were white British, most were in paid work, two-thirds lived with partners, and most of these rated their relationship positively.

General and gynaecological health information are shown in Table 9. Subjective health ratings were generally high and few women reported major illnesses or disabilities. However, about a third were taking prescribed medication and a similar proportion had had medical consultations in the past month.

Scores on the WHQ subscales and Hunter's (1992)^b data for the 45-55 age group are presented on Table 10. The only notable difference between the two sets of scores was on vasomotor symptoms (the majority of the current sample were pre-menopausal). Self-esteem scores ranged from 0 to 5 with a mean of 4.07 (sd=1.19).

Table 8. Socio-demographic characteristics of cross-sectional sample (N=101).

	#		#
Occupational Social Class.		Marital Status.	
Non-manual	67	With Partner:	
Manual	34	- married	54
		- cohabiting	13
Age left Full-time Education.		Not With Partner:	
\< 15	28	- single	10
16	20	- widowed	2
17/18	26	- div/sep	21
>/19	26		
Employment.		Lives with child(ren)	64
Full-time	62		
Part-time	24	Relationship with Partner.	
Not in paid work	14	- (N=67) -	
Ethnic Group.		Poor/fair	20
British white	77	Good/very good	80
British others	9		
Non-British white	13		
Non-British others	1		

Table 9. General and Gynaecological Health information of cross-sectional sample (N=101).

Self-rating of general health.	%	Gynaecological History.	%
Poor/fair	11	Contraceptive pill use ever	67
Good/very good	89	Gynaecological surgery	40
		Parity	77
Current major illness*		Obstetric problems (N=75)	36
Physical	17		
Psychiatric	2		
Medication*		Current Menstrual Problems.*(N=75)	
H.R.T.	9	Premenstrual	27
Psychoactive drugs	2	Bleeding Patterns	
Others	21	(e.g. menorrhagia/clotting)	24
		Others	
		(e.g. dysmenorrhoea)	10
Medical Consultations (past month).			
Once	28	Current Contraception.	
More than once	8	(N= 77 currently sexually active women)	
		Not required (e.g. hysterectomy, vasectomy)	35
Menopausal Status		Pill	5
Pre(including 7 hysterectomized women)	70	Intra-uterine device	15
Peri	18	Barrier	17
Post	3	None	28
On H.R.T.(status undetermined)	9		

* Percentages not inclusive.

Table 10.

Women's Health Questionnaire and self-esteem scores of cross-sectional sample (N=101). (Data from Hunter [1992] in parentheses).

Subscales.	Mean.	S.D.
Depressed mood	0.25(0.22)	0.25 (0.22)
Somatic Symptoms	0.40(0.36)	0.26 (0.25)
Vasomotor Symptoms	0.22(0.44)	0.36 (0.41)
Anxiety/fears	0.31(0.35)	0.29 (0.28)
Sexual Problems (N=77)*	0.23(0.28)	0.28 (0.30)
Sleep Problems	0.35(0.42)	0.33 (0.35)
Menstrual Symptoms	0.44(0.45)	0.36 (0.39)
Memory/concentration	0.37(0.47)	0.34 (0.36)

* omitted by those not currently sexually active.

The MHLCS and HVS Scores are presented in Table 11. The mean HVS score was similar to Lau et al.'s (1986) data based on a sample of parents of college students (therefore likely to have a middle-class bias and comparable in age to the current sample). In comparison with Wallston et al.'s (1978) data for 'young healthy adults', the current sample scored similarly on the IHLC and CHLC dimensions but their mean PHLC score was lower.

Table 11.

Health locus of control and health value scores (N=101)

	<u>Mean</u>	<u>S.D.</u>
MHLCS		
IHLC	25.06 (25.55*)	4.49
CHLC	16.14 (16,21*)	5.62
PHLC	15.45 (19.16*)	5.50
HVS	21.40 (22.95+)	4.92 (4.18+)

* Data from Wallston et al. (1978)

+ Data from Lau et al. (1986)

7.5.ii KNOWLEDGE AND BELIEFS ABOUT MENOPAUSE

a) Descriptive Data

Knowledge of Menopause. As can be seen from Table 12, the most common sources of information are the mass media (eg. magazines, radio, television), followed by peers (eg. friends, older colleagues, sisters), health channels (eg. health education leaflets, family planning doctors), books, and just about a quarter of the sample had been informed by their mothers (eg. discussion with mother, memory of mother's menopause experience).

The majority of the women rated their knowledge of menopause as poor or fair. The mean score on the Knowledge of Menopause Questionnaire was 2.53 (sd=1.84). Table 13 lists the percentages of women who obtained correct scores for each knowledge item. Women who rated their knowledge highly (good/v.good) did indeed obtain higher knowlege scores than those who rated their knowledge as poor/fair ($t=2.64$; $p<.01$).

Table 12.
Self-ratings of menopause knowledge & information sources
(N=101)

Self-ratings	%	Sources	% *
poor	27	mass media	61
fair	44	peers	55
good	22	health professionals	38
very good	7	mother	26
		books	24

* percentage not exclusive

Responses to the Stereotype Question. Table 14 lists the 10 categories of stereotyped responses identified for the open question. The most commonly cited changes were vasomotor symptoms and emotional problems. The sample cited an average of 2.20 categories (sd=1.47), similar to Hunter's (1992b) result for mid-aged premenopausal women.

Table 13. Menopause knowledge scale items
% correct in parentheses

- (21%) On average it takes (4-5 years) for menstrual periods to change from being regular to stopping completely.
- (19%) It is estimated that (25%) of older women in Britain are at risk of osteoporosis (brittle bones).
- (42%) A hot flush most typically lasts for (a few minutes).
- (19%) After menopause, womens' risk from heart disease is (increased).
- (32%) The risk of breast cancer is (slightly increased) in long-term users of hormone replacement therapy.
- (25%) A high-fibre diet (makes no difference to) osteoporosis.
- (34%) Hot flushes are associated with (decreasing oestrogen levels)
- (37%) To avoid pregnancy, women in their forties are generally recommended to continue contraception after the last period (for two years)
- (15%) Compared to non-smokers, women who smoke on average have (an earlier menopause).
- (12%) At present it is estimated that (7-10%) of menopausal women in Britain are currently on Hormone Replacement Therapy.

Table 14. Stereotyped responses - categories and frequencies

Frequencies	Stereotype Categories
69.0%	Vasomotor symptoms (<i>hot sweats, hot flushes</i>)
54.8%	Emotional distress (<i>mood swings, no confidence, irritability, weepiness</i>)
31.0%	General malaise (<i>no energy, insomnia, headache</i>)
26.2%	Attractiveness/femininity (<i>sagging skin, facial hair, weight gain</i>)
26.2%	Menstrual problems (<i>heavy periods, worse PMT</i>)
21.4%	Neutral/positive (<i>periods stop</i>)
10.7%	Major health risks (<i>osteoporosis</i>)
9.5%	Sexual problems (<i>loss of libido, atrophy</i>)
4.8%	Role/relationship difficulties (<i>children leaving home</i>)
2.4%	Cognitive deficits (<i>lose concentration</i>)

Responses to the Attribution Question. Table 15 lists the 10 categories of responses to the open^{question}/eliciting attributions for problems during menopause. Psychosocial factors (eg. 'feelings about herself', 'an understanding family') were most commonly perceived as determinants of differential experience of menopause.

Beliefs about Menopause Scales. Results of the following scales are thus presented: attitude to menopause scale in Table 16; menopause locus of control scales (IMLC, CMLC, PMLC) in Table 17; and perceived seriousness and susceptibility scales in Table 18. The mean ratings for each item, as well as the total summary scale scores for each scale, are shown. Furthermore, to enable comparison of percent agreement with each item, ratings were recoded categorically as 'agree', 'disagree' and 'undecided'.

Table 15. Causal attributions - categories and frequencies

Frequencies	Attribution Categories (examples in italics)
37.0%	emotional outlook (<i>personality, feeling about self</i>)
26.0%	support (<i>GP who would listen</i>)
23.5%	knowledge and attitude (<i>know what to expect, being informed</i>)
18.5%	social network (<i>job satisfaction, interests, hobbies</i>)
17.3%	medical interventions (<i>HRT</i>)
16.0%	healthy habits (<i>good diet, exercise</i>)
10.9%	predetermined (<i>genetics, way she's made, nature</i>)
3.8%	seriousness of symptoms (<i>early menopause, severe symptoms</i>)
2.5%	family history (<i>mother's menopause</i>)
2.5%	menstrual history (<i>her PMT</i>)

Table 16. Attitude to menopause scale - mean scores and percent agreement for each item.
(mean ratings of each item in brackets: higher scores reflect greater agreement)

Specific beliefs	% disagreed	% undecided	% agreed
(2.38) physical attractiveness declines	51.5	24.8	23.8
(4.13) free from menstrual periods	9.9	14.9	75.2
(3.50) part of normal life	14.9	36.6	48.5
(2.44) ageing and death	55.4	18.8	25.7
(3.70) freedom from risks of pregnancy	18.8	20.8	60.4
(3.77) depression or irritability	7.9	34.7	57.4
(3.76) new and fulfilling stage	10.9	30.7	58.4
(3.08) problems with physical health	28.7	32.7	38.6
(3.01) enjoyment of sexual activities	22.8	53.5	23.8
(2.13) deficiency disease	69.3	13.9	16.8

Attitude summary score mean = 3.34 (sd 0.56)

(* Scoring is reversed for the negatively phrased items to obtain the Attitude Scale summary score)

Table 17. Menopause locus of control scales - mean scores and percent agreement for each item (mean scores in brackets; higher scores reflect greater agreement)

	%disagreed	%undecided	%agreed
(3.35) If I feel bad at menopause, I will be able to make myself feel better.	18.8	35.6	45.5
(3.66) It's up to me to take care of myself and prevent problems from occurring during menopause.	10.9	26.7	62.4
Internal menopause locus of control = 3.50 (sd.84)			
(1.95) No matter what I do, if I am meant to have a bad time at menopause, I will.	75.2	14.9	9.9
(1.94) If I am to have difficulties with menopausal symptoms, it would be down to fate.	72.3	12.9	14.9
Chance menopause locus of control = 1.95 (sd 1.00)			
(3.57) My doctor is the person who will be able to help me most during menopause.	17.8	26.7	55.4
(3.19) As soon as I reach menopause, I shall consult a medically trained person who will tell me what to do.	37.6	15.8	46.5
Powerful others menopause locus of control = 3.38 (sd 1.20)			

Table 18. Perceived seriousness and susceptibility to problems relating to menopause - mean scores and percent agreement for each item

(mean scores in brackets: higher scores reflect more serious or susceptible)

	%not at all	%undecided	%very much so
<p>'How serious would you rate the impact of each of the following on women's lives':</p>			
(3.33) frequent hot flushes	16.8	36.6	46.5
(4.40) a prolonged bad experience of menopause	3.0	10.9	86.1
(4.76) osteoporosis	0.0	5.0	95.0
<p>Seriousness summary score = 4.16 (sd.57)</p>			
<p>'How likely do you think it is, that you will develop the following':</p>			
(3.08) frequent hot flushes	24.8	44.6	30.7
(2.80) generally feeling bad at menopause	36.6	38.6	24.8
(3.36) osteoporosis	9.9	55.4	34.7
<p>Susceptibility summary score = 3.08 (sd.81)</p>			

b) Inter-relationships of Menopause Knowledge and Beliefs

A Pearson correlational matrix was used to examine the relationships between the summary scores of the following scales:

Knowledge of Menopause Questionnaire,

Stereotype total score

Attitude to Menopause Scale

Menopause Locus of Control - IMLC, CMLC, PMLC

Perceived Seriousness and Susceptibility - PSR, PSC

Attitude to menopause was moderately associated with negative stereotypes ($r = -.36$; $p < .001$), and with PSC ($r = -.34$; $p < .001$). PMLC correlated moderately with PSR ($r = .26$; $p < .01$) and PSC ($r = .32$; $p < .001$). No other significant relationships have been found between these measures.

c) Factors Related to Menopause Knowledge and Beliefs

Socio-demographic factors. The following variables were coded as categorical: social class (manual/non-manual), education level (up to 16yrs/17 yrs or older), living with partner (y/n), living with children (y/n), ethnic group (white British/others), paid work (y/n). Using t-tests, these groups were compared on all of the summary scores of the scales assessing knowledge and beliefs about menopause.

Women with higher education were significantly less likely to view the experience of menopause as controlled by chance factors ($t=2.41$; $p<.01$) and by powerful others ($t=3.30$; $p<.001$). White British women obtained higher scores on knowledge ($t=2.61$; $p<.01$) and on perceived seriousness of menopause-related problems ($t=2.75$; $p<.01$), compared to other groups. (Chi-square statistics showed that there was no significant association between education level and being white British.)

Higher education was positively associated with having knowledge from/of mother's experience of menopause ($\chi^2=7.78$; $p<.01$), but not with other sources of information.

WHQ and Self-esteem. Current symptom state correlated positively with PSC: depressed mood ($r=.34$; $p<.001$), anxiety/fears ($r=.38$; $p<.001$), somatic symptoms ($r=.31$; $p<.001$); sleep problems ($r=.29$; $P<.01$); vasomotor symptoms ($r=.25$; $p<.01$); and memory/concentration ($r=.25$; $p<.01$). The only other relationship found was between sexual problem ($r=.31$; $p<.01$; $N=77$) and PSR. Self-esteem was unrelated to menopause knowledge and beliefs.

General and gynaecological health variables. The following variables were coded as categorical: general health ratings (poor-fair/good-v.good), past gynaecological surgery (y/n), parity (y/n), and menopausal status (menstruating

regularly/not). These groups were compared on the knowledge and beliefs measures using t-tests. There were no effects significant at 1% level.

Multi-dimensional Health Locus of Control. The 3 health locus of control dimensions correlated significantly with the 3 menopause locus of control dimensions but only moderately: internal .32 ($p<.001$), chance .45 ($p<.001$) and powerful others .36 ($p<.001$).

IHLC also correlated negatively with PSC ($r=-.26$; $p<.01$), ie. women who believed their general health was controlled by internal factors felt less susceptible to menopause-related problems. PHLC correlated negatively with knowledge of menopause ($r=-.27$; $p<.01$), ie. women who believed their health in general was controlled by powerful others had less knowledge about menopause. MHLCS did not relate to any other measures of beliefs and knowledge about menopause.

7.5.iii HEALTH-RELATED BEHAVIOURS

a) Descriptive Data

Distributions of health behaviours are presented in Table 19. The 31% current smokers used an average of 16 cigarettes a day ($sd=8.15$). The 62% regular alcohol users consumed an average of 7.51 units per week ($sd=7.39$). Forty percent engaged in regular leisure exercise at least once a week. The mean BMI

Table 19.
Distribution of health-related behaviours (N=101).

Smoking	%		%
None	69.3	B.M.I.	54.0
Light (1-5 per day)	4.0	18-24	34.0
Moderate (6-19)	12.9	25-29	6.0
Heavy (20 or more)	13.9	30-34	6.0
		35-39	6.0
Alcohol Intake			
Abstinence	37.6	Estimated Daily Calcium Intake.	
Light (1-7 units per week)	37.6	Under 600 mg	22.8
Moderate (8-34 units)	24.8	600-799 mg	32.7
Heavy (35 or more units)	0	800-999 mg	24.8
		1000-1300 mg	19.8
Exercise			
None	59.4	Tea/Coffee Intake.	
Once a week	5.9	0-3 cups	21.0

was 24.75 (sd=4.37) (just over the usually recommended range of 18 to 24). Eighty-seven percent of the women for whom cervical screening was applicable had had a smear test within the past three years; while 41.6% engaged in monthly breast self-examination.

On average, the sample consumed 5.21 (sd=2.08) of the recommended food groups per day. The mean estimated calcium intake was 757mgs (sd=231) per day. Forty percent of the women used food supplements such as cod liver oil and vitamins (not calcium). Caffeine intake as estimated by the daily consumption of tea/coffee averaged at 6.81 cups a day (sd=3.62 cups).

b) Inter-relationships Between HRBs

The following variables were coded as dichotomous and their inter-relationships were examined using chi-square statistics: smoking, regular alcohol use, regular exercise at least once a week, monthly BSE, smear test within 3 years and use of food supplement. No significant associations were found.

These same dichotomous subgroups were compared on BMI, dietary practice, calcium intake and caffeine use. Exercisers had lower BMI than non-exercisers ($t=3.04$; $p<.01$). Smokers had higher caffeine intake than non-smokers ($t=2.77$; $p<.01$). Food supplement users consumed more of the recommended food categories than non-users ($t=2.56$; $p<.01$).

BMI, dietary practice, calcium intake, caffeine intake were entered into a Pearson correlation matrix. Tea/coffee use correlated with calcium intake ($r=.32$, $p<.001$) but no other significant correlations were found.

c) Variables Related to HRBs

The relationships between the background factors and HRBs are summarized in Table 20. Paid employment was associated with non-smoking and regular alcohol use. Compared to white British, women from other ethnic groups were less likely to use alcohol regularly and, they also used less tea/coffee. (There were no differences in social class or education level between white British women and others.) Women who left full-time education after age-16 used less tea/coffee.

There was a positive trend between non-manual social class and regular exercise, lower BMI and regular alcohol use, but these effects did not reach the 1% significance level. Similarly, negative trends were found between leaving full-time education after age-16 and smoking and less healthy eating but these too were not significant at the 1% level.

Pre-menopausal women were less likely to smoke and more likely to use alcohol regularly; menopausal status was unrelated to other behaviours.

Table 20. Relationships between social & health characteristics and health-related behaviours (N=101)

	Smoking	Alcohol	Exercise	BSE	Smear	BMI	Diet	Caffeine	Calcium
Occ.Soc.Cl	--	--	--	--	--	--	--	--	--
Educ >16yrs	---	---	---	---	---	---	---	t=2.58+	---
With Partner	---	---	---	---	---	---	---	---	---
Child(ren)	---	---	---	---	---	---	---	---	---
Paid Work	$\chi^2=8.4+$	$\chi^2=8.3+$	---	---	---	---	---	---	---
Brit.White	---	$\chi^2=6.9+$	---	---	---	---	---	t=4.23++	---
Gen. Health	---	---	---	---	---	---	---	---	---
Maj. Illness	---	---	---	---	---	---	---	---	---
Meno.Status	$\chi^2=6.4+$	$\chi^2=9.1+$	---	---	---	---	---	---	---

+ P < .01 ++ P < .001

WHQ and self-esteem scores were compared between participants and non-participants in the following health behaviours using t-tests: smoking, regular alcohol use, exercise, BSE and cervical screening. The only significant group difference was that exercisers had higher self-esteem ($t=2.40$; $p<.01$). WHQ and self-esteem were correlated with BMI, dietary practice, calcium and caffeine intake. BMI correlated negatively with self-esteem ($r=-.38$; $p<.001$). Caffeine intake correlated positively with somatic symptoms ($r=.28$; $p<.01$), sleep problems ($r=.29$; $p<.01$), and depressed mood ($r=.29$; $p<.01$).

The MHLC and HVS scores of participants and non-participants in the following behaviours were compared, using t-tests: smoking, regular alcohol use, exercise, BSE and cervical screening. Pearson correlational analyses were used to examine the relationships between the HVS and MHLC dimensions and the following measures: BMI, dietary practice, calcium, and caffeine use. No effects were found.

Regular Exercise

Reasons given by exercisers for participation were content-analysed and 5 categories of responses emerged. Forty-one percent mentioned feeling good as a reason for exercising, 37% cited weight/shape control as a reason, 27% mentioned 'fitness' improvement or maintainance, health was mentioned by 19% and stress/tension reduction by 17%.

As reported above, exercisers had lower BMI ($t=3.04$; $p<.01$) and higher self-esteem ($t=2.40$; $p<.01$) compared to non-exercisers, and BMI correlated negatively with self-esteem ($r=-.38$; $p<.01$).

The summary scores of the scales assessing perceived benefits and barriers of regular exercise for the sample as a whole are: . Exercisers also scored significantly higher on perceived benefits ($t=2.85$; $p<.01$) and lower on perceived barriers ($t=5.71$; $p<.001$) of regular exercise. Furthermore, BMI correlated positively with perceived barriers of exercise ($r=.49$; $p<.001$).

Based on the significant findings, 4 variables were entered into a forward stepwise logistic regression analysis as predictor variables for regular exercise: perceived benefits, perceived barriers, self-esteem and BMI. Perceived benefits ($B=.9881$; $Wald=6.9811$; $p<.01$) and perceived barriers ($B=-1.6141$; $Wald=18.4689$; $p<.0001$) correctly classified 71% of exercisers and non-exercisers.

Table 21. Variables that characterise exercisers and non-exercisers (stepwise logistic regression analysis (N=101))

VARIABLE	B	S.E.	WALD	D.F.	SIGN	R	(exp B)
Perceived benefits	.9881	.3740	6.9811	1	.0082	.1918	2.6860
Perceived barriers	-1.6141	.3756	18.4689	1	.0000	-.3488	.1991

7.5.iv INTENTION TO USE HRT

a) Descriptive Data

Twelve women - 10 on HRT and 2 post-menopausal but not on treatment - were excluded from this part of the analysis. This left a sample of 89 women. In response to the intention question, 37 women (42%) expressed an intention to use HRT upon reaching menopause, and 40 (44.4%) did not. The 12 women (13.4%) who were uncommitted, were excluded from the below analyses exploring any differences between intenders and non-intenders.

In total, 58.9% of the subsample (N=77) who had expressed an opinion responded to an open question asking for the main reason for their choice. Fifty-three per cent of intenders and 67.5% of the non-intenders offered reasons (see Table 23).

The most common reason given by intenders was 'to feel good' or 'to feel better'; some wanted HRT because they had heard good reports about it. Only a small proportion of intenders gave reasons based on the prophylactic benefits of HRT or for the control of menopausal symptoms such as hot flushes - currently the most common reason for HRT use.

Reasons offered by non-intenders included not wanting to interfere with a normal process, a general disinclination to take medication, a small proportion were concerned about side-effects, health risks and contra-indications, or that too much about HRT is still unknown.

Table 22. Intention to use HRT (N=77)
(frequencies of response categories)

How do you think you will feel about HRT when you reach the menopause? (tick one only)

44.4%	n=7	I definitely won't want HRT
	n=33	I'd rather not have HRT but would consider it
42.2%	n=28	I'd like to have HRT but have some concerns
	n=9	I definitely will want HRT
13.3%	n=12	I don't really know what it is/undecided

Table 23. Main reasons for HRT intention (N=77)

Intenders (N=37)

17 (47.4%)	No reason offered
8 (21.1%)	Non-specific hopes (eg to feel good, it helps)
5 (13.2%)	Prophylaxis (eg my mother has osteoporosis)
5 (13.2%)	Have heard good reports
1 (2.6%)	Ageing (helps me stay young)
1 (2.6%)	Symptom control (eg to cope with hot flushes)

Non-intenders (N=40)

13 (32.5%)	No reason offered
3 (7.5%)	Side-effects (eg periods, weight gain)
10 (25.0%)	Unnecessary/unnatural (eg prefer not to interfere with a normal process, not necessary for me)
9 (22.5%)	Disinclination (eg hate taking anything, try not to take anything unless absolutely necessary)
2 (5.0%)	Not enough known (eg too much uncertainty)
3 (7.5%)	Risks/contra-indications (eg fibroids, breast cancer)

b) Characteristics of HRT Intenders and Non-intenders'

Socio-demographic variables. There were no significant differences between HRT intenders and non-intenders in terms of social class, age at leaving full-time education, ethnic group, marital status, employment status or parity (Table 24).

General and gynaecological health variables. The two groups did not differ in their ratings of their general health, or in the proportion experiencing a major illness in the past or currently (see Table 25). No significant group differences were found for the following health-related variables: number of visits to the doctor in the past month, uptake of cervical screening, breast self-examination, use of oral contraceptives, having had gynaecological surgery, body mass index, cigarette smoking, alcohol intake or participation in regular exercise.

WHQ and Self-esteem. Means and standard deviations for HRT intenders and non-intenders on the WHQ subscales and self-esteem scale are shown in Table 26. Intenders had significantly higher scores on depressed mood, anxiety and lower scores on self-esteem, compared to non-intenders. There were no differences between groups in reports of somatic symptoms, sexual behaviour, menstrual or sleep problems.

Table 24. Comparisons between HRT intenders and non-intenders on socio-demographic characteristics using chi square statistics (N=77)

	Intenders (N = 37)	Non-intenders (N = 40)	Sign level
Socio-economic Status			
Non-manual	68.4%	75.0%	NS
Manual	31.6%	25.0%	NS
Years of Education			
13-16 years	52.7%	32.4%	NS
17+ years	47.2%	67.6%	NS
Ethnic Group			
White British	76.3%	82.5%	NS
Non-white British	7.9%	7.5%	NS
White Non-British	13.2%	10.0%	NS
Non-white Non-British	2.6%	0.0%	N S
Employment Status			
Full-time	60.5%	72.5%	NS
Part-time	26.3%	20.0%	NS
Marital Status			
Married/cohabiting	68.4%	67.5%	NS
Single	2.6%	15.0%	NS
Widowed	0.0%	5.0%	NS
Divorced/separated	29.0%	12.5%	NS
Relationship with partner			
Good/very good	65.5%	84.2%	NS
Fair/poor	34.5%	15.8%	NS
Parity			
% one or more children	81.6%	75.0%	NS
% children still at home	70.3%	70.5%	NS

Table 25. Comparisons between HRT intenders and non-intenders on general and gynaecological health characteristics and health-related behaviours using chi square statistics (N=77).

	Intenders (N=37)	Non-intenders (N=40)	Sign level
General health:			
Good/v good	92%	95%	N.S.
Current major illness	8%	5%	N.S.
Consulted doctor in past month (1 or more times)	42%	30%	N.S.
Regular cervical smear tests (in past 3 years)	84%	80%	N.S.
Regular breast self- examination	45%	47%	N.S.
Past gynaecological surgery (Hysterectomy, laparoscopy & Caesarian, sterilisation)	42%	35%	N.S.
Oral contraceptive ever used -	71%	60%	N.S.
Body mass index > 24	38%	45%	N.S.
Cigarette smokers	34%	25%	N.S.
Weekly alcohol units > 14 units per week	16%	10%	N.S.
Regular exercise	42%	45%	N.S.

Table 26. Comparisons between HRT intenders and non-intenders on WHQ and self-esteem scores (N=77).

	INTENDERS (N=37)	NON-INTENDERS (N=40)			
	mean (sd)	mean (sd)	t-value	df	P value
Self-esteem	3.81 (1.24)	4.43 (.93)	2.44	66.49	.02
<u>WHQ Subscales</u>					
Depressed mood	.32 (.28)	.16 (.16)	3.05	56.86	.01
Somatic symptoms	.36 (.26)	.37 (.23)	-	N.S.	-
Memory/ concentration	.41 (.37)	.28 (.28)	-	N.S.	-
Vasomotor symptoms	.19 (.33)	.15 (.30)	-	N.S.	-
Anxiety/ fears	.34 (.28)	.22 (.21)	2.05	75	.05
Sexual behaviours	.27 (.29)	.21 (.28)	-	N.S.	-
Sleep	.38 (.34)	.30 (.31)	-	N.S.	-
Menstrual problems	.46 (.39)	.43 (.32)	-	N.S.	-

Beliefs and Knowledge. The range of beliefs compared between intenders and non-intenders, as well as knowledge and source of knowledge about the menopause are presented in Table 27. There were no group differences in scores on the health locus of control or health value.

Women who intended to use HRT upon reaching menopause were no more or less knowledgeable about menopause than those who intended not to use it, but the former were significantly more likely to have been informed by the mass media, while non-intenders were more likely to have been informed by their peers.

HRT intenders differed from non-intenders in certain beliefs about menopause: the former expressed a more negative attitude to menopause on the whole - as assessed by the Attitude to Menopause Scale. On examination of the means of the individual items of the Scale, the difference was only significant for items 3 ($t=4.14$; $df=75$; $p<.000$) and 10 ($t=3.80$; $df=75$; $p<.000$). Item 3 states that menopause is part of normal life and item 10 states that menopause is a deficiency disease. HRT intenders were significantly less likely to express a normal view of menopause and more likely to agree with the deficiency model of menopause.

HRT intenders were also more likely to view their doctors as having more control over their experience of menopause, and less likely to view themselves as having control over it. In addition, HRT intenders were more likely to view themselves as being susceptible to problems relating to menopause..

The two groups did not differ in knowledge scores. The most commonly reported sources of knowledge about HRT were the media sources and peers (friends and relatives).

Stepwise Logistic Regression Analysis. A forward stepwise regression analysis was used to ascertain which variables best characterised HRT intenders and non-intenders. Based on the results of the above analyses, the following variables were entered into the equation: depressed mood, anxiety/fears, self-esteem, attitude to menopause scale items 3 and 10, internal and powerful others menopause locus of control, and susceptibility scale. The 2 attitude items were combined into a single variable named 'model of menopause' in order to reduce the number of variables entered.

The results are presented in Table 28 with *B* values, *Wald*, *R* and significance levels. Model of menopause and depressed mood alone correctly classified 71.43% HRT intenders and non-intenders. These 2 variables with menopause locus of control by powerful others together correctly classified 76.62% of women into intenders and non-intenders.

Table 27. Comparisons between HRT intenders and non-intenders on MHLCS, HVS, menopause knowledge and beliefs (N=77).

	INTENDERS (N=37)	NON-INTENDERS (N=40)	SIGN LEVEL
IHLC	25.10 (4.93)	25.30 (3.70)	N.S.
CHLC	15.45 (6.17)	16.76 (4.81)	N.S.
PHLC	15.68 (5.96)	14.40 (5.19)	N.S.
HVS	5.50 (1.3)	5.11 (1.40)	N.S.
Attitude to menopause scale	3.27 (.55)	3.53 (.61)	t=1.98; df=75; p=.05
Menopause locus internal	3.26 (.72)	3.75 (.76)	t=2.90; df=75; P<.01
chance	1.95 (1.07)	1.89 (.90)	N.S.
powerful	3.86 (1.04)	2.80 (1.10)	t=4.35; df=75; P<.000
Seriousness	4.20 (.54)	4.14 (.54)	N.S.
Susceptibility	3.24 (.71)	2.77 (.77)	N.S.
Knowledge of menopause	2.50 (2.06)	2.97 (1.73)	N.S.
<u>Info sources</u>			
Mother	26.6%	37.5%	N.S.
Peers	42.1%	67.5%	$\chi^2=5.08$; df=1; P<.02
Mass Media	78.9%	57.5%	$\chi^2=4.11$; df=1; P<.04
Books	23.6%	27.5%	N.S.
Health Channels	31.5%	35.0%	N.S.
Others	5.25%	7.5%	N.S.

Table 28. Variables that determine HRT intention (stepwise logistic regression analysis (N=77)).

VARIABLE	B	S.E.	WALD	DF	SIGN	R	(exp B)
Model of menopause	-1.0473	.4047	6.6970	1	.0097	-.2099	.3509
Depressed mood	3.0966	1.3843	5.0040	1	.0253	.1678	22.12
Meno/Powerful others locus	.5965	.2733	4.7624	1	.0291	.1610	1.82

7.6 DISCUSSION

This was a general population sample who were not recruited because of any particular problems or difficulties, hence the response rate of 60% is considered adequate. The general practices from which the sample was drawn had been chosen for their ethnically and socially mixed populations, and help with literacy was offered. Despite this, the proportion of ethnic respondents was disappointing. Women with poor health were also among those who did not respond. Thus the findings in this study should be interpreted with caution when these groups are the focus of interest. The sample comprised different social groups overall, though with a slight middle-class bias. The three sets of variables of interest will be commented separately to avoid confusion.

Comment on findings for menopause knowledge and beliefs

Overall, respondents had a low level of awareness of current information about menopause. Information have been derived mainly from the mass media, or friends and relatives, a finding which is consistent with the results of other studies (Hunt, 1988). Knowledge was unrelated to social status (level of education). White British women obtained higher knowledge scores than others and this finding was not confounded by social status. The only other correlate of knowledge was a health belief - women who perceived health outcome as controlled by powerful others were

less knowledgeable about menopause. Thus some women, who tend to put their trust in doctors and other health professionals, might see less need to gather current information on menopause.

A considerable proportion of the current sample believed that most women experience problems during menopause, contrary to the findings from current epidemiological studies of symptoms actually experienced (McKinlay et al., 1992). In particular, the belief that most women experience emotional difficulties during menopause was widely held. Responses to this general stereotype question were independent of health status, current symptom appraisal (WHQ) and socio-demographic variables. These results concur with those of Hunter (1992a). Stereotyped beliefs also appeared to be fairly specific. They are not strongly associated with the attitude scale, may not necessarily be modified by actual experience of menopause (Hunter, 1992a), and probably reflect cultural biases rather than misinformation.

Psychosocial factors were commonly attributed to a problematic menopause. This suggests that, while many women believed in the role of biological determinants, many also believed that the psychosocial context can modify the impact of such factors on experience. These results are consistent with those of Leiblum & Swartzman's (1986) and the notion that women use different constructions about menopause (see Section 2.4).

Responses to the attitude scale revealed a variety of specific beliefs. Positive feelings about freedom from menstrual periods and the possibility of pregnancy were expressed. More women considered menopause to be part of normal life than a deficiency disease, yet more than half believed hormonal changes at menopause cause mood problems.

In addition to the (more traditional) attitude measure, other measures of beliefs, derived from health psychology constructs, were developed to assess menopause locus of control, perceived seriousness of, and susceptibility to, menopause-related problems. Women who believed that they were susceptible to menopause-related problems had a more negative attitude towards menopause and were more likely to believe in the role of powerful others to modify their experience of menopause. These women were more depressed and anxious and reported more somatic symptoms in general. It appears that perceived susceptibility is influenced by current mood and symptom state, which might partly explain the poorer test-retest reliability of this measure (see 6.3.iv), compared to others that have been developed as part of this research. Women with physical and emotional problems may well see themselves as being susceptible to health problems in general.

The one measure that yielded no correlates was internal menopause locus of control, which was also psychometrically the weakest measure. It has been suggested that internal health locus of

control (IHLC) itself comprises no less than four dimensions (Marshall, 1991). Perhaps the internal menopause locus of control measure in the current study did not adequately tap this construct. In order to fully explore the usefulness of internal locus of control for menopause research, future assessment would need to take on board the complexities now suggested for IHLC.

More highly educated women were less likely to believe in the role of luck or powerful doctors in their experience of menopause. But higher social status was not associated with level of knowledge or attitude to menopause, or with having derived information from the mass media, contrary to Hunt's (1988) findings for middle-class women. Perhaps recent increase in publicity has penetrated all social groups. Interestingly, although publicity emphasising the biomedical perspective (heart disease, osteoporosis, HRT) has increased, whether or not this has improved knowledge about specific aspects of menopause is another question. Publicity might well have influenced global attitude about menopause - as a deficiency disease, but the results here suggest that few women gained specific information about osteoporosis, heart disease, breast cancer, and the impact of lifestyle upon menopause experience and health.

The general lack of strong associations between different types of beliefs in the current study suggests that, attitude to menopause is multi-dimensional, and that menopause may well have many meanings, which vary within and between individuals, and in different contexts.

Comment on health-related behaviours

Comparisons with the rates of the four 'principal habits' of mid-aged women reported in Blaxter's (1990) British population survey on health and lifestyle, where possible, showed that data from the current sample were broadly comparable. The proportions of women who smoked, women with BMI>24, and women who regularly use alcohol were all within the ranges reported by Blaxter. However, the proportion of non-exercisers here is nearly twice as high as that found in Blaxter's sample and is identified in the current study as a particular problem. However, Collins & Landgren (in press) who carried out a survey in Stockholm at the time when the current data were being collected, also reported that 56% of their 48-year old female sample did not participate in regular exercise (smoking prevalence was also reported at 32%).

The 87% uptake of cervical screening is encouraging - higher, for example, than the 64 to 85% reported in Earley et. al.'s (1985) review. However, less than half of this sample practised monthly BSE, compared to Pill and Stott's 62% (1985). While promotion of

this practice has been questioned more recently, the assessment was made when it was still being actively promoted as a health behaviour aimed at early detection of breast cancer.

The estimated calcium intake of 757mgs per day was the same as that found in Coope and Roberts' (1990) study with mid-aged women in general practice, confirming that calcium intake of British women is insufficient in general. The current recommended calcium intake for this age group is 1300mgs per day (Royal College of Physicians, 1989). Only a small proportion of women reached this intake level and a quarter of the sample consumed less than half the recommended amount. Use of food supplements was popular. This behaviour may reflect dietary awareness in that supplement users also consumed more of the healthy food groups, though they were no more likely to engage in the other health behaviours.

The association between smoking and caffeine use might be obvious and is a potential cause for concern. The effects of smoking have been well documented. High caffeine intake has also been cited as a risk factor for CVD and osteoporosis. For instance, Hernandez, Stampfer and Ravnikar (in press) found an inverse linear relationship between caffeine intake and bone density among perimenopausal women after adjustment for other risk factors.

While a health-enhancing life-style on the whole should be encouraged, the results suggest specific health promotion targets for these 45-year old women of the current study. Interventions might aim to promote increases in regular (perhaps especially weight-bearing) exercise, calcium intake, and breast awareness, as well as to reduce smoking and caffeine use.

Health status has been shown to be an important variable in predicting health behaviours in a number of studies (eg. Belloc & Breslow, 1972) and probably accounts for some of the variance in the relationship between social class and health behaviour so often reported. If health status is subsumed within social class, the fact that the health status of this sample was relatively homogenous may have contributed to the weak relationships between social class factors and health behaviours.

In the current study, health behaviours were not significantly associated, unlike in Dean's study (1989) where some behaviours were related. These discrepancies may be partly due to differences in sample size and in the type and range of behaviours assessed. Furthermore, the current sample comprised 45-year old women only, while Dean's sample were aged-45 to 94 years. Interestingly, Dean also did not find any relationships between her two key behaviours - smoking and alcohol - in women, although these behaviours were strongly related in men. Moreover, Dean found that in women, regular alcohol use was associated with several positive health behaviours. The lack of

relationships between behaviours found in the present study is consistent with a number of other studies (eg Calnan, 1985; Pill and Stott, 1985). At present, it is probably fair to say that the relationships between health-related behaviours are complex and elusive, as least as far as mid-aged women are concerned.

The women's perceived control of health outcome by powerful others appeared low compared to Wallston^{et al}'s data (1978). It is not clear why women often express less faith than men in medical interventions (eg Dean, 1984). Women of child-bearing age have greater exposure than men to the health services. By mid-life, they may have accrued certain experiences to enable a more realistic appraisal as to what doctors can or cannot offer. The contradiction of weaker beliefs in and greater use of medications, may mean that situational factors are determining women's help-seeking behaviour in spite of their personal beliefs.

The finding that health behaviours did not relate strongly with general beliefs about health and illness is consistent with Calnan & Rutter (1986) and Pill & Stott (1985). However, specific beliefs about exercise did relate strongly to exercise. Research focusing on specific health beliefs, as opposed to global health beliefs, may yield more fruitful results. Future work may also need to further clarify the sex differences in health beliefs, and which aspects of the social cognition models are most relevant in explaining women's health behaviours.

Perceptions of exercise, regular exercise, BMI and self-esteem were all significantly inter-related. Results of the regression analysis suggest that these perceptions were the strongest factors in exercise participation. Marcus, Radowski and Rossi (1992) also found strong associations between exercise perceptions (termed 'pros' and 'cons') and exercise. The results in the current study suggest that such perceptions may in part be shaped by the women's body image. Weight/shape control was also a most salient reason given by exercisers for participation. Thus body image factors appeared to both motivate and inhibit exercise. This type of variables were also found to be important in Klohn and Rogers' study (1991), where women's intention to improve exercise and calcium levels to prevent osteoporosis was associated with their perception of the visual impact of the condition.

The association between BMI, lower self-esteem, greater barriers and lack of exercise may well reflect a vicious cycle which is a particular problem for mid-aged women. Perceived barriers may have prevented women from adhering to regular exercise which, in turn, contributed to weight gain, lower self-esteem, perception of greater barriers, and so on. Cognitive interventions to modify perceptions as well as improved facilities to reduce barriers, such as programmes being set up for over-weight women only, may be needed in order to increase participation.

Another relationship of interest is that between menopausal status and smoking. Smoking can effect an earlier menopause through its toxic effects on the ovaries (McKinlay, et al., 1985). It is possible, therefore, that smoking has had a causal role in the earlier menopausal changes in the peri- and post-menopausal women. There is also the alternative explanation that peri/postmenopausal women were more likely to smoke as a response to menopausal symptoms (such as hot flushes). Whichever the direction of influence, it is important for preventive health services to target this subgroup of women, who are at greater risk of developing CVD and osteoporosis.

Comment on HRT intention

Over 80% of 45-year-old women had already formed a preference about future use of HRT, only 13% said were undecided. Of those who expressed an opinion, there was a fairly equal split between intenders and non-intenders.

The most common reason given for wanting HRT as based on rather non-specific hopes that HRT might improve well-being. Only a small proportion mentioned future health risks - the usual rationale for promotion - as a reason. Surprisingly only 2.6% mentioned relief from vasomotor symptoms as a reason, even though this is currently the most common reason for uptake - possibly because these women had not yet experienced such changes.

Reasons for not intending to have HRT were predominantly based on

disinclination to use medication and a belief that the treatment is unnatural or unnecessary for them. The common reasons for non-adherence such as side effects, fears about cancer and concerns about the long-term safety of HRT, although mentioned as barriers, was expressed by relatively few non-intenders.

No group differences were evident for social status, health status, and gynaecological history including oral contraceptive pill ever use, nor for general health beliefs (MHLCS, HVS). Intention was also unrelated to the other health-related behaviours assessed.

However, the two groups differed highly significantly in 'model of menopause', depressed mood, menopause locus of control, and also in current anxiety levels, self-esteem, susceptibility to menopause-related difficulties, and having gained information on menopause from the mass media.

Thus intenders scored more poorly on measures of current emotional well-being, expressed a more pathological model of menopause and saw their experience of menopause in the control of people other than themselves. These factors which appear to have distinguished between a large proportion of intenders and non-intenders, may be relevant in predicting uptake of HRT. Given the vague reasons offered for their choice, it seems plausible that some women who are feeling low or distressed look to HRT to improve their well-being. The intenders' belief about

HRT, as being somewhat akin to a general panacea, may also have been affected by media representations of the treatment or over zealous marketing (Worcester & Whatley, 1992).

The logistic regression analysis correctly classified 77% of women intenders and non-intenders. The likelihood of wanting HRT is increased if a woman is depressed, views menopause as a disease and believes her doctor is the best person to deal with her menopausal changes.

CHAPTER 8:
STUDY 2. A PROSPECTIVE EVALUATION OF AN INTERVENTION TO
PREPARE WOMEN FOR MENOPAUSE

8.1 SUBJECTS

All women aged-45 (born in 1946) who were registered at five general practices were targeted for the research (see Section 7.1). The recruitment information for the entire research is summarised in Table 29.

Of the 228 45-year old women, 50 were randomly reserved for the prospective follow-up phase. Of the remaining 178 women, 108 were randomly allocated to the preparation intervention condition [PI]. Sixty-one women (57%) responded by returning their questionnaires, 4 cases were excluded from further analysis due to missing data. At the same time, 70 women were randomly allocated to the control condition [C1]. Forty-five women (63%) responded, 1 was excluded due to missing data. Thus 101 women formed the cross-sectional baseline study reported in Chapter 7.

Subsequently, 7 women in the intervention condition declined intervention and were therefore excluded from further analysis and contact, leaving 50 women in the preparation condition. An additional 11 women were then randomly recruited from the age-sex registers to add to the control group, in order to boost the size of the control group. Of the 11, 7 women responded. Thus the final sample comprised 50 preparation and

51 control subjects. All of these women were contacted at the 3- and 15-month follow-ups. Subsequent response rates are also shown in Table 1.

The women had been randomized into groups prior to being contacted. There were two reasons for this. One was based on the expectation was that a sub-group of those offered the intervention would participate, while a sub-group would not, allowing an assessment of which of the variables best predicted participation. As it happened, virtually all of this group who responded did take part in the intervention and no subgroup comparisons could be made. Another reason for randomizing the women early on was to minimize attrition. Randomization after the completion of the baseline assessment would mean that those then allocated to the intervention condition would have to be contacted again. The introduction of another contact would mean additional attrition making the sample smaller.

At the 15-month follow-up, another 94 women not previously contacted, were invited to participate in the study. Half of these women were also born in 1946 - as for the other two groups, the other half were split between those with late 1945 or early 1947 dates of birth, ie. of almost exact age as the rest. This was because there were only 228 women born in 1946 registered at the practices. Fifty percent (N=47) of the

third group responded and of these, 3 questionnaires were excluded from analysis because of missing data, leaving 44 women to form the second control group.

Table 29. Prospective study sample information			
	<u>PI</u>	<u>C1</u>	<u>C2</u>
Pre-intervention Baseline [T1]			
initial contact	108	70	--
initial response	61(57%)	45(63%)	--
missing data	4	1	--
cases excluded	7	--	--
further recruitment	--	7	--
final T1 sample	50	51	--
Three-month follow-up [T2]	49	47	--
Fifteen-month follow-up [T3]			
response	47	44	47(50%)
missing data	--	--	3
final T3 sample	47	44	44

8.2 PROCEDURE

Women allocated to the Preparation and Control conditions [PI, C1] were sent the same baseline questionnaire and a stamped, self-addressed envelope at Time 1 [T1]. The accompanying letter differed for the two groups. The C1 subjects were simply asked to fill in the questionnaire as part of a survey

of women in midlife. The PI subjects were also asked to participate in the survey and, in addition, they were invited to attend 2 health education sessions aimed to prepare women for menopause. Both groups were informed that there would be follow-up questionnaires. The letters to both groups were co-signed by a GP. Subjects were asked to fill in their questionnaires as accurately as possible, and to contact the authors for assistance with reading or writing if necessary.

The menopause preparation intervention took place approximately one month after the completion of the baseline questionnaires. The structure and content of the intervention are described in Appendix 10.

Three months after the intervention, both the preparation and control groups were sent the second questionnaire [T2]. The third questionnaire was sent 15 months after the intervention [T3] to the new C2 as well as the PI and C1 groups. At each contact, non-respondents were sent a reminder a month later.

8.3 MEASURES

The measures are detailed in chapter 6, and in chapter 7 where the baseline assessment [T1] is described. The T2 and T3 assessments were kept as brief as possible. At T2, only the key outcome variables were re-assessed, so to minimize

attrition. At T3, all the outcome variables as well as potential intervening variables were re-assessed. Description of the measures are kept brief here to avoid repetition.

Social, Health and Menopausal Status

Assessment at T1 and T3 included information on the following: marital status, own and partner's occupation, number of children living at home, their general health ratings (poor, fair, good, very good), current or past major illness or disability, current medication and the number of times a doctor was consulted in the past month. Age on leaving full-time education and ethnic group were assessed at T1 only. Menopausal status was assessed at T1 and T3 by menstrual criteria. The other gynaecological questions asked at T1 (eg. contraceptive pill ever use, past gynaecological surgery, obstetric problems) were not repeated.

Current Physical and Psychological Well-being

The Women's Health Questionnaire (Hunter, 1992b) and the short Self-esteem Scale were administered at T1 and T3 to assess current symptom state and well-being. At T2, only the subscales depressed mood, anxiety/fears and self-esteem were repeated, and not the other WHQ subscales, in order to keep the assessment short.

Discussion of Menopause with Partners

At T2, prepared and control subjects were asked for the first time whether or not they had discussed the menopause with their partner or a significant other person in the past 3 months. They were also asked to rate their reaction using a 4-point scale:

- 1=did not listen or discuss;
- 2=not interested but did listen;
- 3=quite interested and did discuss;
- 4=very keen and helpful.

Knowledge of Menopause

The Knowledge of Menopause Questionnaire comprising 10 multiple-choice items were completed on all 3 occasions. Women also self-rated their knowledge of menopause on the 3 occasions (poor, fair, good, very good).

Stereotyped Beliefs about Menopause

These were elicited by the same open question at T1 and T2: 'What changes, if any, do you think most women experience during the menopause?'

Responses were content-analysed and classified into 10 categories. The stereotype summary score was obtained by adding the negative categories scored and subtracting the neutral/positive category scored. The categories can be seen in Table 14.

Attitude to Menopause Scale

This scale with 5 positively phrased and 5 negatively phrased statements about menopause were completed on all 3 occasions. The minimum score of the total scale was 1 and maximum 5, and the higher the score the more positive the attitude to menopause.

Menopause Locus of Control Scales

The 6 items tapping perceived control of menopause experience by internal [IMLC], chance [CMLC] and powerful others [PMLC] factors, were completed at T1 and T3. However, the lack of non-participants among those respondents who had been allocated to the intervention condition, did not allow for the construct to be tested that way. It was nevertheless included at T3, as a secondary outcome measure.

Perceived Seriousness and Susceptibility

The 6 items tap perceptions of seriousness (PSR, 3 items) and personal susceptibility (PSC, 3 items) to menopause-related problems were also completed at T1 and T3. These scales were also included at T1 so as to examine the predictive value of health belief constructs in the uptake of the preparation intervention. Again, this cannot be tested due to the high proportion of intervention participants relative to the number of respondents.

Health-related Behaviours

Women were asked to provide current information about themselves on a range of health and risk behaviours at T1. Analysis of the T1 data identified the following as potential target behaviours for intervention and assessment of these were repeated at T2 and T3:

Smoking: daily number of cigarettes used

Regular exercise (once a week or more)

Breast self-examination [BSE]: monthly (y/n)

Calcium intake: estimated from quantities of dairy products consumed the day before

Caffeine intake: number of cups of tea and coffee drank the day before (excluding herbal and decaffeinated varieties).

Intention to use HRT

This was assessed by a multiple-choice question on all 3 occasions: 'How do you think you will feel about HRT when you reach the menopause?' (definitely won't / rather not but would consider / like to but have some concerns / definitely will).

8.4 HYPOTHESES

After the intervention, it was hypothesized that:

A) The PI group would improve their scores on the knowledge of menopause questionnaire.

- B) The PI group would express fewer negative stereotyped beliefs about menopause.
- C) The PI group would express a more positive attitude to menopause.
- D) The PI group would become more likely to engage in health behaviours and less likely to engage in risk behaviours after the intervention.
- E) As a result of increased awareness of menopause through completion of questionnaires, the C1 group would also become more knowledgeable about menopause and express more positive attitudes, though the increases would be smaller. Consequently, compared to the newly recruited Control 2 group, Control 1 would have higher knowledge scores and higher attitude to menopause scale scores.

8.5 STATISTICAL ANALYSIS

Data analyses were carried out in several stages. Initially, the PI and C1 groups were compared at baseline on menopausal status, socio-demographic characteristics, general health, WHQ, self-esteem, MHLCS, HVS, knowledge and beliefs about menopause. T-tests for independent samples and chi square statistics were used. Any differences were noted, to be examined later for any confounding effects on outcome.

Second, group comparisons were made between the two control groups (C1 and C2) on the key variables assessed at T3, to establish whether or not C1 differed from C2 due to repeated completion of questionnaires. T-tests for independent samples and chi square statistics were used. If no group differences were found, subsequent analyses would be carried out for the PI and C1 groups only.

Finally, where possible, both within- and between-group differences were examined for the PI and C1 groups, using a range of statistical techniques. The effects of any confounding factors on knowledge scores - the key outcome variable - were examined using analysis of covariance. Once this was established, multivariate statistics were carried out to determine whether or not there was an interaction between intervention and time for knowledge scores.

8.6 RESULTS

8.6.i COMPARISONS BETWEEN THE 2 CONTROL GROUPS [C1,C2]

These 2 groups were compared on the following variables using t-tests for independent samples: WHQ main subscales, self-esteem scale, knowledge of menopause questionnaire, attitude to menopause scale, menopause locus of control scales, seriousness and susceptibility scales, dietary index, caffeine use, and estimated calcium intake. Group differences on participation in exercise (once a week or more), smoking

Table 30. Comparisons between control groups 1 and 2 on key variables at Time 3

	C1 (N = 44)	C2 (N=44)	Stats/Pvalue
WHQ			
Depressed mood	.22 (.24)	.28 (.27)	NS
Anxiety/fears	.30 (.25)	.32 (.28)	NS
Somatic	.36 (.25)	.46 (.29)	NS
Sleep problems	.37 (.37)	.35 (.34)	NS
Vasomotor symptoms	.24 (.35)	.29 (.39)	NS
Menstrual symptoms	.44 (.32)	.43 (.33)	NS
Self-esteem	4.07(1.03)	3.82(1.35)	NS
Knowledge	3.00(1.82)	3.52(2.04)	NS
Menopause locus of control scales			
Internal	3.52 (.79)	3.43 (.89)	NS
Chance	1.99 (.84)	2.20(1.14)	NS
Powerful others	3.59(1.07)	3.40(1.15)	NS
Seriousness scale	4.01 (.62)	4.00 (.63)	NS
Susceptibility scale	3.17 (.75)	3.11 (.73)	NS
Attitude scale scores individual items -	3.50 (.62)	3.47 (.55)	NS
attractiveness	3.81(1.13)	3.86(1.15)	NS
free fr period	4.16(1.11)	4.25(1.08)	NS
normal life	3.21(1.19)	3.43(1.13)	NS
aging/death	3.86(1.15)	3.61(1.30)	NS
free fr pregnancy	4.02(1.22)	4.00(1.41)	NS
depression	2.19 (.93)	2.23(1.18)	NS
new stage	3.79(1.01)	3.59(1.19)	NS
physical probs	3.00 (.98)	2.95(1.16)	NS
sexual enjoyment	3.05 (.92)	2.75(1.01)	NS
deficiency	3.88(1.14)	3.98(1.25)	NS
Health behaviours			
dietary practice	5.00(2.07)	5.36(1.88)	NS
caffeine intake	6.30(2.96)	7.52(4.24)	NS
calcium intake	502 (251)	451 (228)	NS
regular exercise	37%	36%	NS
smoking	30%	21%	NS
breast self-exam	46%	43%	NS

prevalence, and breast self-examination (once a month) were assessed by chi square statistics. Results are presented in Table 30. As can be seen, the 2 groups did not differ significantly on any of the measures. Control 2 group was therefore excluded from further analyses. From here on, 'control' refers to C1 only.

8.6.ii SOCIO-DEMOGRAPHIC, GENERAL AND GYNAECOLOGICAL HEALTH CHARACTERISTICS OF THE PREPARATION AND CONTROL GROUPS

Socio-demographic data of the intervention and control groups are presented in Table 31. The PI group were more likely than the C1 group to have had higher education ($\chi^2=7.10$; $df=1$; $p<.01$). The influence of this factor on the key outcome variable - knowledge of menopause - will be examined below. Analysis using chi square statistics found no other significant group differences in socio-demographic characteristics. As can be seen in Table 31, the two groups also did not differ on any of the indices of health status, gynaecological variables or menopausal status.

8.6.iii PHYSICAL & EMOTIONAL WELL-BEING

Results of the WHQ subscales and self-esteem are presented at Table 32. The WHQ scores of both groups were comparable to those of Hunter's (1992b) standardisation sample. However, the PI group did report a significantly greater level of depressed mood ($t=2.37$; $df=99$; $p<.02$) and sleep problems ($t=2.12$; $df=99$; $p<.05$) at baseline. The influence of these

Table 31.

Baseline characteristics of the intervention and control samples.

	<u>PI</u> (N=50)	<u>C1</u> (N=51)	Sign.level
Socio-demographics			
social class (manual)	28%	37%	NS
FT education \< age-16	34%	61%	$\chi^2=7.10; P<.01$
white British	76%	78%	NS
employed (full/part-time)	84%	88%	NS
live with child(ren)	68%	68%	NS
live with partner	66%	69%	NS
relationship (g/vg)	85% (N=33)	81% (N=32)	NS
General health			
self-ratings g/vg	84%	94%	NS
current major illness	8%	8%	NS
seen doctor past mth	42%	30%	NS
Menopausal status			
pre	60%	67%	NS
peri/post	26%	15%	NS
hysterectomized	6%	8%	NS
HRT	8%	10%	NS
Gynaecological history			
pill use ever	66%	69%	NS
gynae. surgery	44%	37%	NS
parity	74%	80%	NS

Table 32.

Group comparisons of WHQ and self-esteem scores on 3 occasions.

	Preparation		Control I
Self-esteem			
T1	3.92 (.124)		4.22 (1.12)
T2	4.23 (1.12)		4.08 (1.25)
T3	4.06 (1.26)		4.07 (1.03)
Depressed mood			
T1	.31 (.26)	*	.19 (.23)
T2	.22 (.22)+		.19 (.25)
T3	.24 (.24)+		.22 (.24)
Anxiety/fears			
T1	.35 (.28)		.27 (.29)
T2	.28 (.21)+		.23 (.27)
T3	.35 (.27)		.30 (.25)
Somatic			
T1	.43 (.26)		.36 (.26)
T3	.39 (.27)		.36 (.25)
Vasomotor			
T1	.24 (.37)		.21 (.36)
T3	.24 (.37)		.24 (.35)
Sexual			
T1	.20 (.26)		.25 (.29)
T3	.23 (.34)		.36 (.26)
Sleep			
T1	.42 (.36)	*	.28 (.29)
T3	.35 (.31)		.37 (.37)
Menstrual			
T1	.48 (.36)		.41 (.35)
T3	.41 (.33)		.44 (.32)
Memory/concent			
T1	.44 (.33)		.31 (.34)
T3	.38 (.34)		.39 (.37)

+ significant within-group difference

* significant between-group difference

initial group differences on the key outcome variable, knowledge of menopause, will be examined below using analysis of co-variance.

At T2, the prepared group improved on the WHQ depressed mood ($t=2.67$; $df=48$; $p<.01$) which was maintained at follow-up; this group also scored significantly less on WHQ anxiety/fears at T2 ($t=2.62$; $df=48$; $p<.02$) but the anxiety scores returned to baseline levels at follow-up.

8.6.iv KNOWLEDGE OF MENOPAUSE

At T1, 51% of the PI group and 71% of the C1 group had talked about menopause, mainly with their peers or health professionals.

At T2, 75% of the PI group and 50% of the C1 group who were in a relationship had discussed the menopause with their partner in the preceding 3 months ($\chi^2=5.31692$; $df=1$; $p<.02$). The proportions of each group who rated their partner's reaction in each of the 4 categories are listed in Table 33.

Self-ratings of knowledge

The self-ratings of knowledge for each group on the 3 occasions are presented in Table 34. Self-ratings did not differ between groups at T1. Using McNemar tests, the proportion of the PI group who self-rated their knowledge highly (g/vg) increased significantly at T2 ($p<.000$) and at T3

($p < .01$). No significant changes were found for the C1 group. The between-group differences were also significant at T2 ($\chi^2 = 8.14$; $df = 1$; $p < .01$) and at T3 ($\chi^2 = 5.21$; $df = 1$; $p < .02$).

Table 33. Partner's reaction to discussion about menopause

	PI	C1
	%	%
did not listen or discuss	0	6
not interested but did listen	29	19
interested and did discuss	67	56
very keen and helpful	4	19

Knowledge of Menopause Questionnaire

The means and standard deviations of the knowledge scores for the PI and C1 groups on 3 occasions are presented in Table 34. The scores are plotted in Figure 3. The group by time interaction for knowledge scores was examined by analysis of variance for mixed designs. The interaction was found to be highly significant ($F = 15.57$; $df = 2, 172$; $p < .001$). Paired t -tests showed that, for the PI group, the within-group differences were significant between T1 and T2 ($t = 6.81$; $df = 48$; $p < .000$) and between T1 and T3 ($t = 6.64$; $df = 46$; $p < .001$). For the C1 group, no significant difference was found between these occasions.

Table 34. Group comparisons of self-ratings and mean scores (and standard deviations) on the knowledge of menopause questionnaire on 3 occasions.

	Preparation		Control I
Self-rated knowledge as good-v.good			
T1	20%		37%
T2	69% +		40%
T3	49% +		26%
Knowledge Questionnaire			
T1	2.46 (1.78)		2.61 (1.92)
T2	5.31 (2.73)+	*	2.89 (2.06)
T3	4.98 (2.12)+	*	3.00 (1.83)

+ significant within-group difference compared to T1.

* significant between-group difference.

In order to examine whether or not higher education was a confounding factor in the gain in knowledge for the PI group, subjects in this group were split into low and high education groups (≤ 16 and > 16). These subgroups of PI subjects did not differ significantly in knowledge at any of the occasions, nor did they differ in the amount of post-intervention improvement on knowledge.

Likewise, the PI subjects were median-split into low and high depressed mood, again this was not a significant factor in knowledge at any of the 3 occasions.

8.6.v BELIEFS ABOUT MENOPAUSE

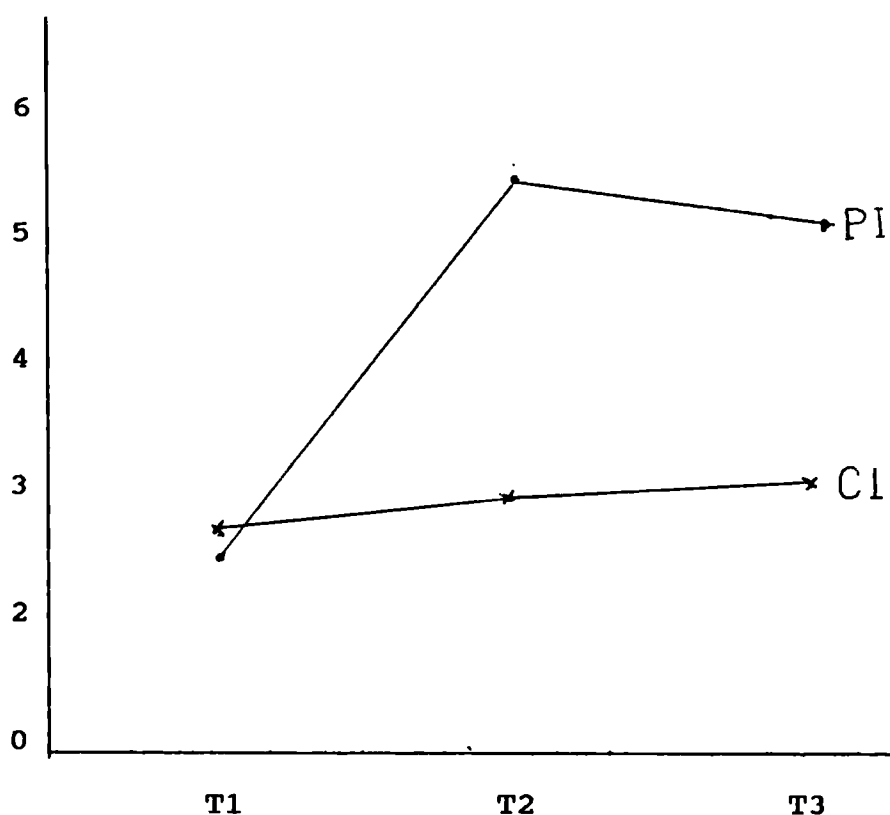
Negative Stereotyped Beliefs about Menopause

At T1 and T2, the PI and C1 groups were asked the same open question aimed to elicit stereotyped beliefs about menopause. Their responses were content-analysed in the same way on both occasions and the proportions of each group who cited any of the 10 categories of responses are presented in Table 35. Chi square statistics were used to examine any group differences for any of the categories at T1 and T2. No group differences were found at T1. At T2, however, PI subjects were less likely to express the belief that most women experience emotional problems at menopause ($\chi^2=7.13$; $df=1$; $p<.01$) and more likely to express positive or neutral beliefs ($\chi^2=10.47$; $df=1$; $p<.001$).

The stereotype score was calculated by adding the negative categories and subtracting the neutral/positive. The PI group expressed 2.10 and 1.11 negative stereotype categories at T1 and T2 respectively. The within-group difference on this total stereotype score was significant for the PI group ($t=2.75$; $df=35$; $p<.01$). For the C1 group, the figures were 2.16 and 2.00 respectively and this was not significant. Group comparison of the mean stereotype scores at T2 were examined using ANCOVA, with baseline depressed mood and age-left-full-time-education entered as co-variates. The PI group had significantly fewer negative stereotypes ($F=11.880$; $df=1$; $p<.001$); neither of the covariates was significant.

Figure 3.

Group by time interaction on knowledge of menopause



Attitude to Menopause Scale

The mean total attitude scores and standard deviations of the intervention and control groups on the 3 occasions, as well as the mean scores of each group on each of the 10 items, are presented in Table 36. There were no significant changes to

Table 35.

Comparison between preparation and control groups on stereotyped responses - categories and frequencies on both occasions.

	Preparation		Control I
Health Risks			
T1	15%		7%
T2	4%		7%
Flushes/sweats			
T1	70%		68%
T2	56%		61%
Emotional			
T1	50%		59%
T2	27%	*	57%
Sexual			
T1	13%		7%
T2	13%		14%
Menstrual			
T1	28%		25%
T2	22%		21%
Somatic			
T1	30%		32%
T2	13%		32%
Cognitive			
T1	0%		5%
T2	2%		5%
Attractiveness/femininity/aging			
T1	25%		27%
T2	16%		16%
Role/relationships problems			
T1	8%		2%
T2	2%		2%
Neutral/positive changes			
T1	26%		16%
T2	48%	*	14%

*** significant between-group difference**

Table 36.

Group comparisons of scores on attitude to menopause scale items on 3 occasions

	Preparation		Control I
Total Scale Score:			
T1	3.40 (.53)		3.46 (.59)
T2	3.60 (.44)		3.57 (.51)
T3	3.65 (.44)		3.50 (.62)
Individual Items:			
<i>less attractive</i>			
T1	3.52 (1.27)		3.73 (1.22)
T2	3.82 (1.03)		3.74 (1.09)
T3	3.94 (1.05)+		3.81 (1.14)
<i>free fr menstruation</i>			
T1	4.00 (1.11)		4.25 (1.18)
T2	4.08 (1.10)		4.30 (1.04)
T3	4.04 (1.18)		4.16 (1.11)
<i>normal development</i>			
T1	3.65 (0.80)		3.35 (1.35)
T2	3.86 (0.87)	*	3.28 (1.08)
T3	3.72 (1.01)	*	3.21 (1.19)
<i>aging/death</i>			
T1	3.51 (1.42)		3.59 (1.27)
T2	3.67 (1.18)		3.64 (1.15)
T3	3.81 (1.10)		3.86 (1.15)
<i>free fr pregnancy</i>			
T1	3.55 (1.36)		3.90 (1.35)
T2	3.65 (1.25)	*	4.17 (1.13)
T3	3.76 (1.35)		4.02 (1.22)
<i>depression</i>			
T1	2.22 (0.99)		2.25 (1.09)
T2	2.63 (1.05)+	*	2.09 (1.14)
T3	2.64 (0.87)+	*	2.19 (0.93)
<i>new stage</i>			
T1	3.76 (0.94)		3.76 (1.16)
T2	3.69 (0.96)	*	4.06 (0.84)+
T3	3.74 (0.94)		3.79 (1.01)
<i>physical problems</i>			
T1	2.72 (0.99)		3.12 (1.23)
T2	3.24 (1.05)+		3.43 (1.12)
T3	3.34 (0.92)+		3.00 (0.98)
<i>sexual enjoyment</i>			
T1	3.02 (0.82)		3.00 (1.06)
T2	2.94 (0.72)		3.02 (0.92)
T3	3.09 (0.75)		3.05 (0.92)
<i>deficiency</i>			
T1	4.08 (1.24)		3.67 (1.29)
T2	4.43 (1.04)+		4.00 (1.35)
T3	4.49 (0.80)+	*	3.88 (1.14)

+ significant within-group difference compared to T1.

* significant between-group difference.

the total scale scores for either group. However, scores on most of the negative items improved for the PI group at the post-intervention assessments. These were the beliefs that menopause caused physical problems (T1/T2: $t=2.69$; $df=48$; $p<.01$; T1/T3: $t=3.35$; $df=46$; $p<.001$), that menopause caused depression or irritability (T1/T2: $t=2.60$; $df=48$; $p<.02$; T1/T3: $t=2.84$; $df=46$; $p<.005$), that menopause is a deficiency disease (T1/T2: $t=2.05$; $df=48$; $p<.05$; T1/T3: $t=2.46$; $df=46$; $p<.02$), and that physical attractiveness declines after menopause (T1/T3: $t=2.03$; $df=46$; $p<.05$).

The C1 group improved on one of the positively phrased items at T2, that menopause could be a new and fulfilling stage of life, ($t=2.09$; $df=46$; $p<.05$). No other within-group changes in attitude was found for the C1 group.

Menopause Locus of Control Scales

The means and standard deviations of the menopause locus of control scales are presented in Table 37. No between- or within-group difference was found for the internal, chance or powerful dimensions.

Perceived Seriousness and Susceptibility Scales

The means and standard deviations of the scales assessing perceived seriousness and susceptibility in relation to menopause-related complaints are presented in Table 38. The scores on individual items are also presented. No significant

difference was found between the groups for any of the items using t-tests for independent samples. However, two between-group differences were found using paired t-tests. As far as the preparation group was concerned, scores of the item assessing the seriousness of a negative menopause experience decreased ($t=2.86$; $df=46$; $P<.006$). The Control 1 group reported feeling significantly more susceptible to a negative experience of menopause at T3 ($t=-2.50$; $df=42$; $P<.017$). No other difference was found.

Table 37.

Group comparisons of mean scores (sds) on menopause locus of control scales at T1 and T2

	Preparation	Control 1
Internal		
T1	3.66 (.73)	3.35 (.92)
T2	3.84 (.74)	3.52 (.79)
Chance		
T1	1.94 (.97)	1.95 (1.04)
T2	1.82 (.76)	1.99 (.84)
Powerful others		
T1	3.34 (1.26)	3.42 (1.16)
T2	3.06 (1.02)	3.59 (1.07)

Table 38.

Group comparisons of mean scores (sds) on perceived seriousness of and susceptibility to menopause-related complaints

	Preparation	Control 1
Perceived serious of:-		
hot flushes		
T1	3.20 (1.01)	3.45 (1.14)
T2	3.06 (.92)	3.14 (1.13)
osteoporosis		
T1	4.74 (.56)	4.78 (.50)
T2	4.62 (.68)	4.74 (.66)
-ve exp of meno		
T1	4.48 (.86)	4.31 (.81)
T2	4.06 (.87)+	4.14 (.83)
Perceived susceptibility to:-		
hot flushes		
T1	3.40 (.88)	3.31 (1.01)
T2	3.02 (.94)	3.59 (1.01)
osteoporosis		
T1	2.78 (1.11)	2.82 (1.37)
T2	2.79 (.93)	3.09 (.92)
-ve exp of meno		
T1	3.20 (.88)	2.96 (1.08)
T2	3.21 (.81)	3.37 (1.05)-

+ scores decreased significantly compared to T1

- scores increased significantly compared to T2

8.6.vi HEALTH-RELATED BEHAVIOURS

Frequencies of health-related behaviours for each group on the 3 occasions are presented in Table 39. The most noticeable differences were for the prepared group: the proportion of smokers decreased from 28 at T1 to 19% at T3; and the proportion of HRT-intenders decreased from 50% at T1 to 31% at T3. However, analysis by McNemar tests did not show these within-group changes to be statistically significant. For the PI group, tea/coffee use was significantly reduced at T2 ($t=2.54$; $df=48$; $p<.01$) and T3 ($t=4.69$; $df=46$; $p<.001$). The increase in calcium intake derived from dairy sources was not significant for. There were no differences over time in the prevalences of exercise participation and breast self-examination. No behavioural changes were found for the C1 group at T2 or T3.

8.7 DISCUSSION

At baseline, the response rate for women assigned to the intervention condition (57%) was slightly lower than that for women assigned to the control condition (63%), even though both groups were recruited at the same time using the same procedure. The women allocated to the intervention condition were encouraged to complete the survey - whether or not they wanted the intervention. It had been envisaged that only a subgroup would take up the intervention while the rest would

Table 39. Group comparisons of health-related behaviours on 3 occasions.

	Preparation	Control 1
Cigarette Smoking		
T1	28%	33%
T2	26%	34%
T3	19%	30%
Regular Exercise		
T1	44%	37%
T2	51%	38%
T3	45%	37%
Breast Self-examination		
T1	42%	41%
T3	47%	46%
Intention to Use HRT		
T1	50%	43%
T2	33%	47%
T3	31%	38%
Dairy calcium (mgs)		
T1	463 (239)	452 (220)
T2	458 (245)	459 (256)
T3	511 (219)	502 (251)
Caffeine intake (cups)		
T1	7.0 (3.8)	6.6 (3.2)
T2	5.9 (4.1)	7.0 (3.8)
T3	5.6 (3.5)+	6.3 (3.0)

+ significant within-group difference

just complete questionnaires, allowing for an assessment of variables that characterize uptake of health education by mid-aged women. However, most of the respondents took up the intervention; the 7 women who completed questionnaires but did not participate in the intervention were too small to form a comparison group and had to be excluded. Those randomly assigned to the intervention group who responded were more highly educated and more depressed (though their WHQ depressed mood scores were well within the normal range).

The two groups were comparable on nearly all of the variables assessed. The pre-intervention differences - higher education and depressed mood for the PI group - appear not to have influenced the key outcome, in that more highly educated women did not gain more knowledge than less highly educated women. Likewise, baseline depressed mood did not have an impact on subsequent negative beliefs about menopause.

Participants of the intervention showed changes on knowledge and beliefs about menopause at post- and follow-up. The knowledge questionnaire sampled women's knowledge of menopause. Those who participated in the health education did become more knowledgeable afterwards.

The intervention did not have a sweeping impact on overall attitude to menopause. Rather, changes were subtle and specific. The prepared group spontaneously expressed fewer

negative stereotyped beliefs about menopause after the intervention. Previously held negative stereotyped beliefs, assessed in the same way, was found to be a predictive factor for depressed mood during menopause (Hunter, 1992b). Hence it may be predicted that fewer women in the prepared group would experience depressed mood upon reaching menopause, compared to controls.

Scores on the negative phrased items of the attitude to menopause scale improved, but not those on the positive items. In particular, fewer women expressed the widespread and persistent view that most women experience depression caused by hormone changes during menopause. The changes to knowledge and beliefs about menopause were maintained at follow-up 15 months later. The main aim of the intervention was to counter overly negative attitudes, rather than encourage denial of possible problems and future health risks. Thus the intervention has achieved one of its main goals.

Few changes were found for the scales derived from the healthy psychology models (health locus of control, perceived seriousness and susceptibility). Perceived control over the experience of menopause by self, chance or powerful others did not change for either group. However, the prepared group perceived a negative menopause experience as less serious at T3. It is possible the intervention has reassured women that menopause is a transient process which is part of normal life.

The control group reported feeling more susceptible to a negative experience of menopause at T3, while at the same time increased their scores on one of the positive items of the attitude to menopause scale. The completion of questionnaires might have raised the level of awareness of menopause in some women resulting in minor changes in the positive and negative directions. However, these women did not present a consistent pattern of changes like those observed for the intervention group. When compared with the new control group (C2), awareness gained through questionnaire completions did not seem to have a significant impact on knowledge and beliefs about menopause or health-related behaviours.

The lack of a clear pattern of change in the results of the measures based on health psychology constructs may be partly related to problems of the measures detailed in 6.3.iii & iv. It is therefore not possible to conclude, on the basis of this research, how useful are constructs derived from the social cognition models for understanding beliefs and behaviours in relation to menopause.

It is not clear why women who had the intervention became less depressed afterwards. One interpretation is that the transient and mild elevation of depressed mood helped to draw women to the intervention, which might have been perceived as a source of psychological support, even though the intervention was not

presented as a form of therapy. It is possible that mood is a factor in uptake of health-related interventions for women in general. On the other hand, during the health education sessions, some women recognised that they needed to reduce stress. These women were encouraged to use the cassette tape included in the take-home pack which, throughout the 60 minutes, outlined the rationale, techniques and life-style changes for dealing with stress. It is possible that this component of the intervention has had an impact on depressed mood for some women.

One of the aims of the study was to explore any secondary benefits that the intervention might have on health-related behavioural changes. For participants of the intervention, there were significant changes in caffeine intake from pre- to follow-up. Analysis of the baseline data (Chapter 7) identified caffeine intake as a health promotion target for the sample on the whole, thus the significant reduction is encouraging. Moreover, caffeine intake was moderately associated with dairy calcium intake at baseline; while the former decreased, the latter was maintained at the same levels, suggesting that some women were increasing their calcium intake from sources other than the milk used with tea and coffee.

Both PI and C1 increased their dairy calcium intake but the differences were not statistically significant. It is not known whether calcium levels increased on the whole, since non-dairy sources were not assessed. This was due to the fact that the complexities involved in quantifying the entire diet would burden the already detailed assessment further.

The proportion of smokers also decreased from 28% at pre- to 19% at follow-up for the intervention group. Analysis of the baseline data identified a relationship between smoking and earlier menopausal changes, a finding supported by epidemiological data (McKinlay et al, 1985). It was concluded that smoking is an important health promotion target for mid-aged women. However, it is difficult to ascertain the validity of this result, considering that there are certain demand characteristics in the reporting of health-related behaviours, particularly smoking. To adult smokers, the increasing prohibition conveys the message that smoking is anti-social and some women who believe that they should stop might feel compelled to report that they have. The intervention was not specifically targeted at smoking cessation, hence the reduction - while not significant - is striking. If it be valid, the result is particularly encouraging, in view of the specific problems that smoking pose for menopause.

An unexpected change found for the prepared group was that the proportion of women intending to use HRT decreased from 50% at pre- to 31% at follow-up. It may be that some of the prepared women now held more realistic expectations about the benefits of the treatment; and/or only those who now considered themselves at risk (of osteoporosis and/or cardiovascular disease) have maintained their positive intention. Again, a larger sample would have allowed for this difference to be tested more adequately.

The lack of post-intervention change in the proportions of women who carried out monthly breast self-examination was not surprising. At the time of the baseline assessment, BSE was still being promoted as a preventive health behaviour and was included but came under question soon afterwards. During the intervention, the importance of BSE was not particularly emphasised and women were encouraged to look out for the latest information on preventive breast care.

On the other hand, regular exercise was encouraged during the intervention and the absence of change was disappointing. At baseline, and for the whole sample, participation was positively related to self-esteem and negatively related to perceived barriers of exercise (Chapter 7). This, together with the finding that weight control was a most popular reason given for exercise, suggest that factors to do with body image may be as important in women's health-related behaviours as

those to do with health. Either the intervention did not modify exercise perceptions sufficiently or the perceived barriers did actually reflect difficulties that could not be easily overcome. For instance some women might have been too overloaded with commitments to participate in exercise on a regular basis. In general, regular exercise remains a difficult though important health promotion target, and information alone is insufficient for change (Drew, 1994).

There was an appreciable response to the offer of the health education being evaluated in this study, which confirms the finding of Roberts (1991) that there is a demand for information relating to menopause from mid-aged women. This study demonstrates that health education in relation to menopause can have multiple goals - more accurate information, attitude change, as well as reductions in behavioural risk factors (Kemmm, 1991). The results from this study suggest that suggest that such an intervention is viable within the existing primary care network and that at least some of these important goals can be achieved.

CHAPTER 9

GENERAL DISCUSSION

The overall objective of this research was to develop and carry out a controlled evaluation of a health education intervention to prepare 45-year old women for menopause.

Five general practices collaborated with the research. Women registered at the practices who were aged-45 at the start of the study were all targeted for the research. They were randomly allocated to one of 3 groups. Women allocated to the Preparation Intervention (PI) and Control 1 (C1) groups were sent identical questionnaires at Time 1. This formed the cross-sectional descriptive study of mid-aged women's knowledge of and attitude to menopause, the prevalence and correlates of a range of health-related behaviours, and the women's intention regarding future HRT use.

The PI group subsequently participated in the intervention, which is detailed in Appendix 10. The PI and C1 groups were sent a second questionnaire 3 months after the intervention (Time 2), and again a year later (Time 3). At Time 3, the third group - Control 2 (C2) - were contacted for the first time with a postal questionnaire, in order to control for the effects of completing questionnaires by C1. Knowledge and

beliefs about menopause, and health-related behaviours at Times 2 and 3 were compared with the Time 1 measures, to examine any changes.

The main findings are now summarized in relation to the hypotheses outlined in Sections 7.4 and 8.4. These findings are discussed with reference to previous research and implications for future research are drawn out. Limitations of the current research are discussed and directions of future research and clinical practice are suggested, in the final part of this chapter.

Some of the preparation participants made some interesting comments on the post-intervention questionnaires spontaneously. These comments might highlight some of the issues in the life of mid-aged women. Extracts are presented verbatim, also in Appendix 10.

9.1 DISCUSSION OF MAIN FINDINGS

Results of the current research are based on women aged-45 at the beginning of this research. They were recruited from the age/sex registers of five general practices. Findings in relation to the hypotheses outlined in 7.4 and 8.4 are discussed.

1A) Knowledge about menopause comes mainly from the mass media.

The women have obtained information on menopause from multiple sources including friends, relatives and health professionals, suggesting that menopause may now be more commonly discussed. The mass media were indeed the most popular source of menopause information - over 60% of women had obtained information this way. This supports Kadri's (1990) findings for general practitioners, who viewed that exposure to mass media representations of menopause had been on the increase (and that anxiety and consultations had also increased as a consequence).

Despite increased publicity of menopause and hormone replacement therapy, and considering that most women have been exposed to information sources about menopause and HRT, the current study suggests that the level of information held by mid-aged women based on current information about menopause is nonetheless low.

1B) Most women express negative stereotyped beliefs, in particular the belief that emotional problems and depression are consequences of menopause for the majority of women.

The findings for negative stereotyped beliefs were remarkably similar to Hunter's (1992a) carried out in the mid-1980s. It would appear that, although information may now be more available, this has not countered against negative menopause

stereotypes. Substantial proportions of the current sample believed that for most women, menopause is accompanied not just by physical symptoms but also psychological difficulties including depression, irritability and lack of confidence. Beliefs in the link between menopause and negative emotional changes have been reported in previous work (eg. Avis & McKinlay, 1991).

On the other hand, and in support of findings by Leiblum & Swartzman (1986), many in the current sample attributed a negative experience of menopause to psychosocial factors. These results confirm that while women may express their ideas about menopause using a medical discourse, many believe in the role of life circumstances in modifying experience. In contrast, general practitioners have been found to be more likely to attribute negative experiences of menopause to biological factors (Liao et al, 1994).

1C) Women express both positive and negative beliefs.

Although negative beliefs about menopause are common, previous research has shown that when asked, women also express positive beliefs (Holte, 1992; Avis & McKinlay, 1991; Hunter, 1992a). The attitude to menopause scale has been developed to tap a range of positive and negative beliefs. The results concur with previous findings. Three-quarters of the sample agreed that menopause brings welcome relief from menstruation and 60% agreed that menopause meant freedom from the risks of

pregnancy. These results suggest that women hold both positive and negative views. Future research assessing attitude to menopause would also need to assess both, so not to bias results unduly towards one direction or another.

1D) Knowledge and beliefs are not significantly inter-related.

The knowledge of menopause questionnaire attempts to sample empirically derived information of menopause. The scores were not related to any of the beliefs scores, suggesting that this measure was not just another measure of beliefs. Furthermore, the different types of beliefs were only moderately related if at all. This lends some support to the notion that women may use different constructions about menopause in different contexts (Chapter 2 - 2.4). These results point to the importance of defining goals when it comes to psychosocial interventions relating to menopause. For instance interventions might aim to improve the sense of personal control, or knowledge, or increase the perceived seriousness of postmenopausal health risks. Health professionals would need to clarify what changes are being targeted, and to evaluate interventions accordingly.

Ultimately, it is the changes which promote well-being during menopause that are important. These questions cannot be addressed by the current research. In order to examine what predicts well-being at menopause, the sample would have to be followed up until they reach menopause.

1E) Women with higher social status have more knowledge and also more negative beliefs.

More highly educated women were no more knowledgeable about menopause, compared to women with fewer years of full-time education. Women with more education were less likely to believe in the external locus of control of menopause experience, but education was not a factor in other beliefs relating to menopause. Previous research has identified social class differences in attitude to menopause using different assessment techniques (eg. Standing & Glazer, 1992). The contrast between the current findings and previous work may be attributable to the different measures used. Alternatively, the gap between different social groups may be narrowing due to more the increasingly widely available information on menopause.

1F) Negative beliefs about menopause correlate with current symptom state.

Neither knowledge or beliefs were related to general and gynaecological health factors. However, perceived susceptibility to menopause-related problems was positively associated with a number of current symptoms as assessed by the Women's Health Questionnaires (Hunter, 1992b). During pilot work, the susceptibility measure was found to have poor test-retest reliability. Its relationship with current symptom state suggests that this measure may not have

adequately assessed susceptibility as outlined in the Health Belief Model (Janz & Becker, 19984). Instead, it may have elicited a temporarily pessimistic outlook, due to the presence of various symptoms. Perhaps if perceived susceptibility to other problems had been assessed, a positive relationship may also be found for susceptibility and current symptom state.

1G) Negative beliefs about menopause correlate with health locus of control.

Locus of control over the experience of menopause did relate to locus of control over general health outcome, suggesting that locus of control may be a useful construct in menopause research (Sledmere, 19083). However, it was menopause locus which related to beliefs about menopause. Menopause locus of control was also a factor in HRT intention - not health locus of control. It seems that 'condition-specific' measures of locus of control may be more useful, as least as far as menopause research is concerned.

1H) Health-related behaviours are not strongly inter-related.

Results on health-related behaviours suggested specific health promotion targets for this group of 45-year old women: increases in regular exercise, calcium intake and breast awareness, and decreases in cigarette and caffeine consumption. Uptake of cervical screening was already high (Eardley et al, 1985) and this was also not identified as a

priority target. Similarly, alcohol use was low compared to other surveys (Blaxter, 1990) and this was again not considered a target.

The lack of inter-relationships between the health-related behaviours assessed was not surprising and concur with previous research with mid-aged (Calnan, 1985) and younger women samples (Pill & Stott, 1985). Perhaps this is one area where further research is not needed. It may be futile to expect the diverse behaviours subsumed under 'health-related behaviours' to cluster meaningfully. The reason for wanting to find such a cluster would be to do with the development of theories to account for them. A vast array of our day-to-day behaviours can have an effect on our health, well-being, and safety. For instance crime-prevention strategies can have important consequences in our health and well-being, as is the installation of a smoke alarm, not speeding on the road, or a reasonable standard of personal hygiene. It does not seem feasible to develop theories to account for all health-related behaviours, for these theories must also account for a vast array of other behaviours that are not presently investigated by psychologists but are nonetheless important in preventing death, injuries and disease.

The future success of improving our understanding of health and risk behaviours may rest on defining and developing a 'taxonomy' of health-related behaviours, and on developing

specific psychological models to predict specific sets of behaviours which can be expected to cluster meaningfully. For instance in the current research, exercise participation was linked to body mass index, smoking was linked to tea and coffee drinking, use of food supplement was linked to greater consumption of healthy food categories, and smoking was linked to menopausal status.

At the very least, a distinction would need to be made between behaviours requiring little effort once the initial decision has been made (eg. cervical screening, breast screening, childhood immunisation) and behaviours requiring continual commitment (eg. regular physical exercise, healthy dietary practice, smoking cessation). Alternatively, it may be important to distinguish between health and risk behaviours. Another example of classification is separating the cessation/reduction behaviours (eg. alcohol intake) from uptake behaviours (eg. screening).

1J) Health-related behaviours are associated with socio-economic status.

Contrary to previous results (Calnan, 1985; Pill & Stott, 1985), the current research found few relationships between health-related behaviours and social status. This discrepancy may be due partly to the fact that the current sample enjoyed high subjective health status, which has been identified as an important predictive variable for healthy practices (Belloc &

Breslow, 1972). Previous findings supporting a relationship between social class and health-related behaviours may have confounded social class with health status. A direction for future research would be to ascertain the intervening variables between higher socio-economic status and health outcome, and where along the pathway do health-related beliefs and behaviours feature.

1K) Health-related behaviours are associated with health status.

It was not possible to test this hypothesis because the majority of the sample rated their general health highly. Examination of the medical notes of the non-respondents found a considerable number of them suffered major health problems. This self-exclusion by women with health problems might have contributed to the high proportion of women with high health status among the respondents. To women with major health concerns, menopause may be less salient or even relevant. This may be a reason for these women to exclude themselves from the research. This methodological problem might have been avoided, had menopause not been mentioned initially. However, this would be impossible to sustain, since the intervention was designed to prepare women for menopause. It is also questionable whether promoting an intervention without clarifying the key objective is entirely ethical.

1L) Health-related behaviours are associated with current well-being.

Only two behaviours were associated with current well-being as assessed by the WHQ and self-esteem scales. Participation in exercise once a week or more was related to higher self-esteem, although the direction of influence cannot be ascertained. Had there been a larger sample, with a proportion of non-exercisers changing over to exercisers and vice versa, it would have been possible to test examine cause and effect.

Surprisingly, exercisers did not enjoy greater well-being, an association which has been found for both normal (eg. Slaven & Lee, 1994) and clinic (eg. Doyne et al, 1983) samples. It is possible that a larger sample with a more stringent definition of 'regular exercise' and a more direct assessment of well-being (eg. Diener, 1984) rather than symptom levels, would have yielded more positive relationships between exercise and well-being.

Factors underpinning mid-aged women's health behaviours may differ from those that motivate men (3.3.iii). The findings for self-esteem and exercise and HRT intention in the current research appear to support that view. It would be interesting to examine whether self-esteem is a determinant of men's level of leisure physical activities.

Tea and coffee use was related to scores on a number of the WHQ subscales (somatic symptoms, sleep problems and depressed mood). Caffeine intake has been identified as a risk factor for osteoporosis (Hernandez et al, in press) and heart disease (James, 1991). Moreover, sleep problems may increase in mid-life (Hunter, 1992a). It would appear that reduction in caffeine use is an important health promotion target for mid-aged women.

1M) Health-related behaviours are related to health locus of control and health value.

No significant associations were found between health-related behaviours and health locus of control and health value. The lack of relationships between health behaviours and health beliefs was also evident in another study. Calnan & Rutter (1986) assessed the capacity of health beliefs in explaining health behaviours of mid-aged women. A range of health beliefs, and breast self-examination frequency and technique before and after a BSE class were assessed. The authors reported that 'changes in beliefs were generally poor predictors of changes in behaviour' and that furthermore, prior behaviour was a stronger predictor of subsequent behaviour than beliefs. They also found perceived value of the action (BSE) to be an important predictor and suggested that for health education, information would more fruitfully aim at increasing the value of the action, or response efficacy, rather than the perception of the disease. The

authors discussed certain theoretical implications of their findings. They suggested that the health belief model may be improved upon by taking into account 'normative' beliefs, i.e. 'perceptions we have of how salient-others believe we should behave' (Calnan & Rutter, 1986).

Studies assessing the explanatory and predictive power of health belief constructs for health behaviours have generally yielded mixed results (Marteau, 1989; Steptoe & Wardle, 1992). In the light of this, the current lack of findings for health locus of control is not surprising. Indeed the usefulness of the social cognition models in explaining health-related behaviours has increasingly come into question (Johnston et al, 1993). Dissatisfied with the inconsistent findings for generalized health beliefs, assessment of or condition-specific health beliefs are now increasingly common (eg. Georgiou & Bradley, 1992; Saltzer, 1982). The current study did find a relationship between menopause locus of control and HRT intention, and between exercise perceptions and participation. It may be that measures of specific beliefs are more helpful in predicting behaviour than beliefs about health outcome in general.

1N) Regular exercise is related to perceived benefits and barriers of exercise.

This hypothesis was substantiated. The proportion of regular exercisers was lower than those found for British samples by Blaxter (1990) but similar to a study carried out at the same time in Sweden (Collins & Landgren, 1994). The relationship between exercise participation and perception identified here, concurs with the findings of Marcus et al (1992). It further supports the view expressed above (1G) that research focusing on the relationships between specific beliefs and related behaviours may yield more fruitful results. Indeed results of the logistic regression analysis suggest that these perceptions were the strongest factors characterizing exercisers and non-exercisers.

Exercise participation, exercise perceptions, body mass index and self-esteem were inter-related and may well represent a vicious cycle for mid-aged women. Figure 4 summarises this set of findings. A circular relationship between these factors is tentatively proposed for mid-aged women.

1P) Most women have not formed an opinion regarding future HRT use.

The data from this study contradict this hypothesis. The sample comprised 45-year old women and women who had already reached menopause and/or were already on HRT were excluded from the analyses. This helped to prevent contamination of intention with experience of menopause. Of the 89 women who fulfilled these criteria, only 12 women did not express an

Figure 4.
A framework for understanding mid-aged women's participation in regular exercise

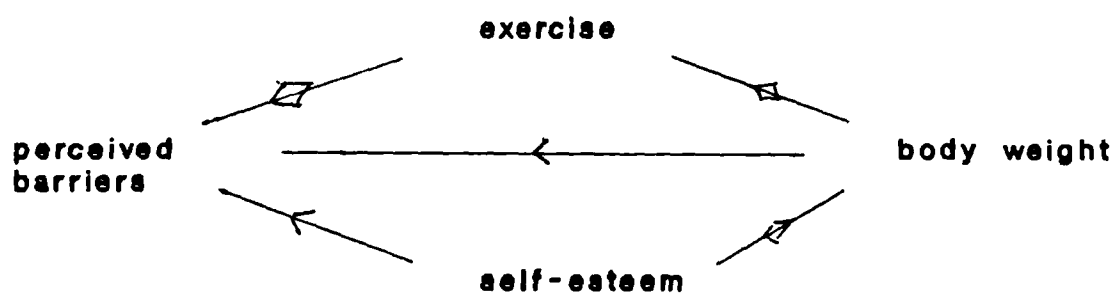
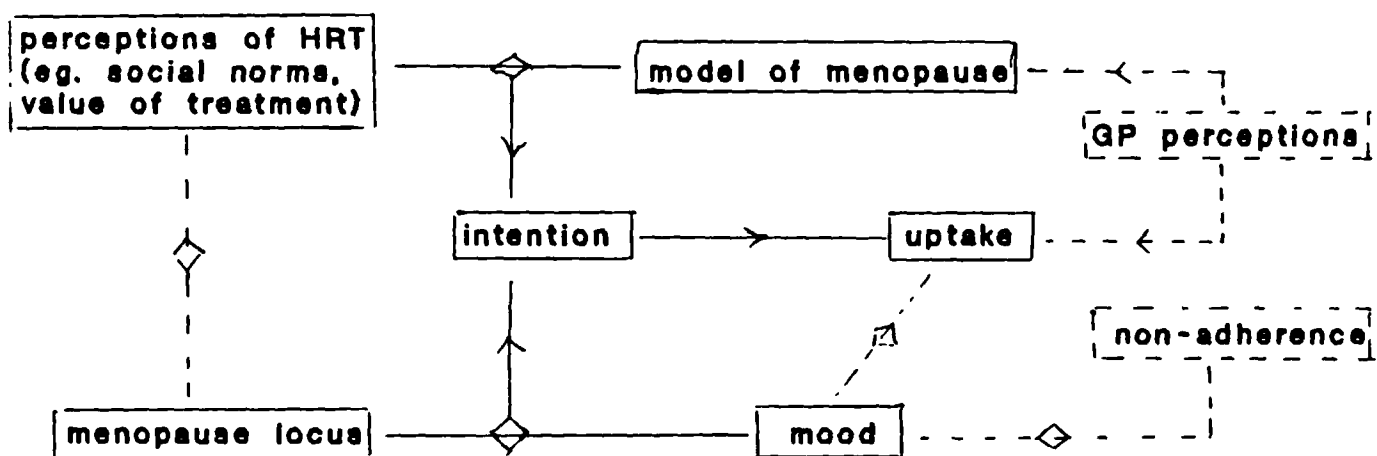


Figure 5.
A framework for understanding HRT decisions



opinion on future HRT use while the remaining 77 women were split almost evenly between intenders and non-intenders. Most 45-year old women have indeed formed an opinion regarding future HRT use.

10) HRT intention is not strongly related to other health-related behaviours.

This hypothesis was substantiated. HRT intention was unrelated to the other health-related behaviours assessed and also to multi-dimensional health locus of control. HRT intention was related to a specific set of factors, which are discussed below. In chapter 3 (3.3.iii), questions were raised as to whether or not HRT use may be conceptualized as a health behaviour and the results from this study does not provide clear support for that.

1R) HRT intention is related to socio-demographic and health factors

The characteristics of intenders and non-intenders were compared. There were no significant differences between groups in socio-demographic variables, or in general and gynaecological health factors. The notion based on earlier findings that women who use HRT differ in life-style and sociodemographic background was also not supported by Collins & Landgren (in press).

1S) HRT intention is not associated with menopause knowledge.

This hypothesis was substantiated. HRT intenders and non-intenders did not differ on their scores on the knowledge of menopause questionnaire which sampled empirically derived information as opposed to personal beliefs. Currently HRT is being promoted as prophylaxis against osteoporosis and cardiovascular disease. Few intenders gave this as a reason for wanting HRT, confirming that their choice reflected idiosyncractic personal preference rather than rational decision-making. Vague hopes about improving well-being or perception that other people believe it to be a good thing characterised positive intention. Lack of understanding about the benefits of HRT and unrealistic expectations may have contributed to the poor adherence rates so often found (eg. Wren & Braun, 1990; Hemminki et al, 1991).

1T) HRT intention is associated with beliefs about menopause.

This hypothesis was also substantiated. Positive intention regarding future HRT use was characterized by a medical view of menopause, and low internal and high powerful others locus of control over the experience of menopause. For non-intenders the reverse was found. This supports the previous findings that menopausal women who choose not to accept HRT are less likely to view menopause as a medical condition or even as an event of importance (eg. Ferguson et

al, 1989). The current research does not shed light on how salient menopause is to the HRT intenders and non-intenders and this may be a useful area for future research.

1U) HRT intention is related to current symptom state.

HRT intention was indeed related to higher levels of depressed mood, which supports previous findings (eg. Hunter, 1992a). Higher levels of anxiety and poorer self-esteem were also among characteristics found for HRT intenders.

In a large-scale Sweden population survey, Collins & Landgren (in press) found that menopausal women using HRT had the highest scores on negative moods and vasomotor symptoms as well as decreased sexual desire. Thus factors influencing intention appear to be similar to the factors that have influenced actual uptake.

When depressed, people often tend to feel helpless and less in control of events, including their health. Conversely, internal locus of control and a sense of personal mastery over life changes are associated with well-being (Abramson, Seligman & Teasdale, 1978; Gatchel, 1980).

The current results on HRT intention of premenopausal and general findings for HRT use by menopausal women suggest that some women might be seeking HRT at menopause to help alleviate pre-existing emotional difficulties. This may have important

implications for treatment adherence. Prospective studies of the experience of menopause have demonstrated that depression in mid-aged women is primarily associated with psychosocial factors rather than the menopause per se (Hunter, 1990b; Kaufert, Gilbert & Tate, 1992). If women approaching menopause expect HRT to alleviate their life problems, they might well be disappointed and discontinue treatment. This process might partly explain low adherence rates with HRT regimens for a sub-group of women.

It is important to acknowledge the values and beliefs of women who do not wish to use HRT. Their opinions appear to be based upon general beliefs about the menopause, health, and the use of medications. Promotion of HRT might best be focused upon the specific health benefits of HRT for certain groups of women. Furthermore, attempts should be made to make psychological support available to women who are depressed in mid-life, in order to help them clarify the causes of their problems and to seek appropriate solutions.

The findings for HRT intention, supported by previous research, are summarized in Figure 5, whereby pathways of decision making are tentatively suggested. Further longitudinal research with larger samples are necessary for developing and testing the framework.

2A) After the intervention, the PI group would improve their scores on the knowledge of menopause questionnaire.

This hypothesis was substantiated. Fifty women attended the health education intervention aimed to prepare for menopause. Their post-intervention knowledge and beliefs about menopause, as well as health-related behaviours, were compared with the baseline measures. After the intervention, the knowledge scores significantly increased for the prepared group and this change was maintained at the 15-month follow-up. Improvement was marginal and non-significant for the control group. In addition, the prepared women rated their knowledge of menopause more highly after the intervention.

Because the women were randomly assigned to the 2 conditions, it was predicted that they would be equivalent on all the measures at baseline. However, the 2 groups differed significantly on years of full-time education - a key index of social status for women, and depressed mood. These 2 factors were not related to knowledge of and attitude to menopause at baseline. They were also examined for their possible impact on the key outcome predicted for the intervention - increase in knowledge of menopause. It was found that women who had had higher education did not differ from those with lower education in terms of post-intervention improvement. Similarly, high- and low-depressed mood subgroups also did not differ in improvement on knowledge. This methodological problem is further discussed in 9.2.

2B) The prepared group will express more positive and fewer negative beliefs about menopause.

This hypothesis was partially substantiated. Changes in attitude to menopause following the intervention were subtle and specific. After the intervention, the prepared group were significantly less likely to agree with the negative views about menopause, and less likely to spontaneously express negative menopause stereotypes in response to the open question. In particular, they were less likely to link menopause with emotional difficulties following the intervention. The prepared women were also more likely to spontaneously express neutral beliefs about menopause in response to the open question. However, they did not become more positive about menopause following the intervention.

So far research has not linked a positive attitude with well-being at menopause. Rather, negative attitudes held in the pre-menopause have been found to predict more vasomotor symptoms (Avis & McKinlay, 1991) and depressed mood (Hunter, 1992a). Thus one might predict that fewer negative changes will be experienced by the prepared group upon reaching menopause. Unfortunately investigation of this causal relationship was not within the scope of the current research.

2C) The PI group may become more likely to engage in health behaviours and less likely to engage in risk behaviours after the intervention.

This hypothesis was partially substantiated. For the prepared group, caffeine intake was significantly reduced. The proportion of smokers and HRT intenders also decreased, but these did not reach statistical significance, perhaps due to inadequate sample size. The key objective of the intervention was primarily aimed to modify knowledge and beliefs about menopause. The sample size was adequate for examining these particular dependent variables, but not for assessing changes in categorical variables for subsamples. Though not statistically significant, the finding of a reduction in smoking prevalence by 30% is encouraging, provided the result is valid.

The finding for changes in HRT intention warrants further comments. When the entire sample was asked, at baseline, about intention regarding future HRT use, regression analyses showed HRT-intenders to be more likely to be depressed and to view that menopause experience was controlled by doctors, and less likely to have derived their information from friends and relatives (as opposed to media and health channels). Reasons then given for positive intention were largely based on non-specific hopes that HRT would make things better; few gave reasons relating to symptom control or prophylaxis against future health risks. The current intervention offered

information on the established benefits of HRT without presenting it as a universal panacea. Women were encouraged to discuss the information and arrive at a considered choice. Although the intervention was not intended to dissuade women from using HRT, the re-appraisal by individuals may have caused some women to change their mind.

The lack of change in the prevalence of exercise for the intervention group was disappointing. Mindful of 'healthism' outlined by Kelly (1989) and lay people's ambivalence about health advice (Stott & Pill, 1990), the importance of exercise in the maintenance for health and well-being in the postmenopause was not emphasized nearly enough during the intervention. Perhaps a more intensive programme may be required to shift changes in levels of physical activities. However, various studies have also found exercise a difficult health promotion target to achieve (Dishman, 1988). Moreover, knowledge about factors that underpin exercise by mid-aged women is so meagre that it is difficult to conceive how best to promote it. Perhaps community initiatives targeting mid-aged women and especially those who consider themselves over-weight, may address the problem more adequately.

2D) The C1 group would also become more knowledgeable about menopause and express more positive attitudes, though the increases would be smaller.

As a result of increased awareness of menopause through completion of questionnaires, it was predicted that the C1 group would also improve on knowledgeable and beliefs about menopause. Consequently, compared to the newly recruited Control 2 group, Control 1 was expected to obtain higher knowledge scores and higher attitude to menopause scale scores at the final assessment. Infact, the completion of questionnaires did not appear to have a significant impact on Control 1 - their scores did not differ from those of the new group recruited at the final assessment. This further strengthens the argument for the type of systematic interventions like the current one, since the raising of awareness - through questionnaire completion in this instance (or media reports in others) - appear not to have improved knowledge or changed negative beliefs.

9.2 CRITIQUE OF CURRENT RESEARCH

A key problem of the research was the allocation of the women into groups prior to the initial contact. The response rates of the intervention and control groups subsequently differed slightly, which might have contributed to the two differences in sample characteristics: age left full-time education, and depressed mood. Two factors contributed to this problem.

First, it was expected that the a similar response rate would be achieved for both groups. Within those allocated to the preparation condition who responded, it was thought that a proportion would participate in the intervention and a proportion not, allowing an investigation of variables predictive of intervention uptake. This did not materialise since uptake of the intervention was fairly high.

The problem of sample differences might have been avoided if the sample was first recruited then randomized. However, even then, intervention participants might still be overly represented by those who are slightly more depressed and/or those who are better educated. The additional contact might have meant meant a further attrition and reduction in sample size, causing other difficulties in interpretation.

In view of this sampling bias, age left full-time education and depressed mood were examined for their possible impact on the key dependent variables. No significant effect was found for either of the two factors.

When the medical notes of non-respondents were examined where possible, about on third of the women had ethnic names. It is possible that some of the women with ethnic names were white British. However, since the general practices had relatively high proportions of ethnic populations and had indeed been selected for the research on that basis, it is fair to assume

that most of these non-respondents were women belonging to minority ethnic groups. This is a major problem of health research in general and limits the generalizability of the current findings. Conventional recruitment methods have not been shown to be particularly effective in engaging ethnic populations, and specialist approaches may be needed (Elliott & Fuller, 1991).

This remains one of the most neglected areas in psychological research in general and is also true of menopause research. As reviewed in Chapter 1, observations by cross-cultural researchers have greatly enriched our understanding of menopause experience (eg. Flint, 1975; Lock, 1980). However, the cultures differ markedly in key areas of life style and life span between the different cultures studied. This makes it difficult to conclude which are the most important factors that influence the differential experience of menopause in different countries (Beyenne, 1986). Multi-ethnic research within the same country would narrow the differences in fertility pattern, dietary practice, climate pattern, and so on. One interesting methodology would be to compare the host population with an immigrant population and the population from which the immigrant group had originated.

Flint & Samil (1990) put forward an interesting methodology comparing rural, urban and migrant women of the same country. They also suggested that men should be recruited to interview

partners. None of these suggestions have been taken up. Dennerstein and co-workers are currently conducting a study with Australian-born women (Dennerstein, 1994). However, since the influx of immigrant groups to Australia is a relatively recent event, it remains to be seen whether or not ethnic women are represented in their sample of mid-aged women who have been born in Australia.

The self-exclusion of women with health problems not only limits the generalizability of the current findings, it also meant that health status was not a discriminating variable and could not be examined as a factor in perceptions relating to general health and menopause, and in health-related behaviours.

The cross-sectional design of the first study does not enable causal interpretations of the relationships observed, such as that between exercise, self-esteem and weight, and that between smoking and menopausal status. The lack of change in exercise participation in the prospective phase of the research meant that it was not possible to examine factors that predictive exercise behaviour change in mid-aged women.

Although the sample size was adequate for testing group differences on the continuous variables, such as knowledge and beliefs about menopause, it was too small for assessing changes in categorical variables for subgroups such as smokers. For instance, it would have been interesting to

examine the effects of increasing knowledge upon womens' intention regarding future HRT use. As it stands, the trend found in the current research will need to be replicated in larger prospective studies.

Finally, the introduction of a second control group (C2) into the design appears to have served the research little; this may not be necessary for future research of a similar kind.

9.3 RECOMMENDATIONS FOR FUTURE RESEARCH

Future research may benefit from assessing knowledge and a range of beliefs about menopause. The important question is not whether knowledge or attitudes affect the experience of menopause, but what specific beliefs affect which aspect of menopause - be it overall experience, self-help, use of health services, or treatment choice and adherence.

In addition, the beliefs of health professionals also warrant consideration (Marteau & Johnston, 1990). Doctors tend to regard menopause as a more pathological process than women, due probably to their exposure to clinic attenders and to the portrayal of menopause as an oestrogen deficiency disease in medical texts (Cowan et al., 1985; Liao et al, 1994). If both women and doctors are particularly inclined to believe that hormonal changes at menopause cause depression, psychological difficulties experienced by mid-aged women may be misattributed to menopause. Inappropriate solutions may then be prescribed and important psychosocial factors are not addressed (Liao et al, 1994).

Women who practise health behaviours may be motivated by factors that are different from those that motivate men. For instance self-esteem may be an important variable in women's health behaviours. Furthermore, the impact of health and risk behaviours on mid-aged women's health may differ from that for other groups. For instance, Blaxter (1990) found that healthy practices made little difference to the health status of younger groups of both sexes but the relationship is strengthened for men and women in their forties.

In future, attribution theory could further our understanding of women's thoughts, feelings and behaviour relating to menopausal changes. It has been found that some women would attribute their negatively perceived behaviours to symptoms of the menstrual cycle, even when situational factors would have provided adequate explanations (Koeske & Koeske, 1975). And yet both the current study and an earlier one by Leiblum & Schwarzman (1986) found that while women might have a pathogenic view of menopause, a negative experience of menopause was often attributed to life circumstances or psychosocial factors. These inconsistencies highlight the importance of qualitative approaches (Morse, 1992).

Qualitative approaches are also needed to examine the salience of menopause. Concerns of healthcare researchers over the lack of response to health promotion messages have prompted

social scientists to examine the salience of health in lay thinking (eg. Calnan & Williams, 1985). Indeed, there is growing dissatisfaction with the current predominantly positivist approach in health research even among psychologists (see Johnston et al, 1994). Likewise, a qualitative methodology is needed to observe the salience of menopause in mid-aged women's thoughts and actions. Such an approach would allow for spontaneous expressions of ideas about menopause without an awareness of the topic under investigation. Thus responses are not framed by the questions asked to the same extent; and are more likely to reflect what the respondents view as important rather than what the researcher considers important.

Knowledge of and attitude to menopause held by partners and/or by adult sons and daughters are also an important area of research, as is their impact on the women's experience. Again, qualitative methodologies may make a significant contribution to describing these complex and interactive issues.

9.4 Recommendations for Clinical Practice

Many mid-aged women express a need for more information on menopause (Roberts, 1991) and the uptake of the current intervention confirms that there is indeed an appreciable demand. This salient time-point presents valuable

opportunities for health promotion. Rather than focusing on smoking cessation alone, or weight control, or stress reduction, women may be encouraged to use the menopause transition positively, to review their health and life-style on the whole. Such an approach would be in line with the current healthcare philosophy emphasizing personal responsibility for health and well-being (Health of the Nation, 1992).

Since women appear to hold different types of beliefs about menopause, just as they do about general health, information should aim beyond merely imparting knowledge, which assumes that recipients are a passive and homogeneous group. Health education practice would need to address the dynamic factors such as social stereotypes, personal sense of vulnerability, and perceived value of health actions. This might be best carried out in small groups, in which these individual factors, as well as the psychosocial and cultural context of menopause and aging, can be considered.

Health education should aim at both empowerment and observable reductions in behavioural risk factors (Kemmm, 1991). Psychologists can make a valuable contribution to such an endeavour. However, those currently employed in the health services are mainly clinical psychologists, whose discipline first developed in hospital settings with an abnormality or illness orientation. Many clinicians are unfamiliar with

interventions other than treatment and therapy. But many would now argue that alternative approaches emphasising health, well-being, prevention and community participation are needed in primary care.

The current intervention - in the form of 2 workshops - aimed to modify ageist and sexist stereotypes of menopausal women by providing factual information on menopause and mid-life, raise awareness of the long-term health issues such as prevention of osteoporosis and cardiovascular disease, and facilitate informed consent to hormonal treatments. Different components of the intervention include the provision of information, expression and exchange of differing view-points, discussion and mutual support.

The intervention accomplished these aims and was designed so that it could be carried out within the current primary care network with existing personnel. Professionals such as practice nurses, health visitors, GPs and psychologists can carry out such an intervention with some specialist training. It is doubtful whether information alone could have produced similar effects on knowledge and attitudes.

However, the intervention did not shift exercise. Given the importance of exercise in the prevention of osteoporosis and cardiovascular disease, it may be necessary for health and exercise personnel to intervene in a collaborative ways, in

order to increase participation in mid-aged women. The recent study by Slaven & Lee (1994) provides evidence to show that exercise in menopausal women can alleviate psychological distress as well as provide physical benefits. Thus this is a particularly important area for further service development and research focusing specifically on mid-aged women.

At present, complaints related to menopause are attended to mainly by general practitioners, who report different prescribing habits (Kaufert et al; 1986; Liao et al, 1994). The sometimes radically different opinions may seem bewildering to some women. The offer of HRT instead of support services to women presenting with life problems may impede potential solutions. However, withholding treatment from women who have made a considered choice and actively seek HRT to deal with menopausal symptoms and/or reduce future health risks is equally disempowering. Psychologists, already part of the primary care network, can make an additional contribution to services for mid-aged women, by working with general practitioners on these problems.

Psychological understanding of doctor-patient communication and treatment adherence (Ley, 1982)) may be applied, to systematise discussions and information-giving in relation to HRT. Such interventions may enable women to make their own personal choice, generate realistic expectations, and minimize attrition.

The development of alternative techniques for the management of hot flushes (Germaine & Freedman, 1984; Stevenson & Delprato, 1985; Hunter & Liao, in press C), as well as sexual difficulties, will increase women's choice of services and is another area where primary care psychologists can make a contribution.

Although the current health education intervention provides an example of how psychologists can apply their skills in primary care settings beyond conventional therapies, the usual range of therapeutic interventions, carried out with special sensitivity to issues of mid-life and menopause (eg. fertility, sexuality) would obviously be valid for working with this client group.

Finally, it may be possible to facilitate community interventions such as the setting up of a menopause network. Due to the fact that participants in the intervention were engaged in a prospective research project, no attempt was made to encouraged them to form their own local support network, despite suggestion to that effect by some women who have attended preparation. If the intervention is to be implemented on a wider scale, follow-up support to form a local network would be an important aspect of the service. Such a network may also be important for facilitating support from important others such as partners and friends, and not just health professionals. Currently no lay network exists for menopause like the National Childbirth Trust. The Amarant Trust is the closest to being a network for menopause but the

main agenda is to promote awareness of HRT. Perhaps if a self-help network eventually exists, the preparation intervention can be accomplished by trained lay women.

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APPENDIX 1. PILOT STUDY 1: INTERVIEW SCHEDULE

Health and Health-related Behaviour Section

How would you rate your current health:

How would you describe your current diet:

In an average week, how often do you have:

diary products

meat

fresh vegetables and fruits

pulses

high fibre cereals

mineral and vitamin supplements, tonics, etc.

How many cups of tea/coffee do you have per day:

How much alcohol do you consume per day/week:

What is your height, weight:

Do you smoke (if so, how many per day/week):

Do you exercise (if so, what types, how often and how long have you been doing them):

What types of physical activities are part of your daily life:

Do you consider yourself an active person:

To what extent do you feel you are in control of your own health:

Menopause Section

When I say the word menopause, what comes to mind:

How would you rate your knowledge of the menopause, where does this knowledge come from:

On average, between what ages do periods stop:

Does the menopause affect women's lives, if so, how:

Sometimes terms like 'hot flushes' and 'osteoporosis' come up, would you know what they mean, or what cause them:

Do you expect to develop them, if so, can you say why:

What aspects of the menopause concern women most:

What do you think is the main reason that some women have no problems and others do:

To what extent do you think these problems are preventable or controllable:

There doesn't have to be any but, should you have problems during the menopause, what are you most likely to do:

In general, how much do you think the average woman know about menopause:

Would it make any difference at all if women know more:

Do you think women would want to find out more about the menopause:

We're thinking of developing ways to help women prepare for menopause, do you have any suggestions:

What if anything, would you want to know more about:

Appendix 2.

ASSESSMENT OF EXERCISE PARTICIPATION

The first two questions deal with 'deliberate' exercise while the last deals with routine physical activities.

1. At present, do you exercise regularly: ☐ YES ☐ NO

(If NO, go straight to Question 2)

If YES, please give details as follows:

<u>Type</u>	<u>How Often</u>	<u>Duration per session</u>	<u>For how long</u>
eg. yoga	once a week	45 mins	past 2 mths
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

What is your main reason for exercising: _____

(Go to Question 3)

2. Have you exercised regularly for the past year:

☐ yes ☐ NO (If NO, go the Question 3)

If YES, please give details as follows:

<u>Type</u>	<u>How Often</u>	<u>Duration per session</u>	<u>For how long</u>
_____	_____	_____	_____
_____	_____	_____	_____

What was your main reason for stopping: _____

3. Do you have a physically active life-style (eg do a manual job, long walk to work, on your feet most of the time):

☐ YES ☐ NO

If YES please state the main or most strenuous activity that you have to do regularly:

Appendix 3.

KNOWLEDGE OF MENOPAUSE QUESTIONNAIRE

1. On average it takes:
/ several months / four to five years* / a couple of years /
don't know / for menstrual periods to change from being
regular to stopping completely.
2. It is estimated that:
15% / 25%* / 40% / don't know / of women in Britain are
at risk of osteoporosis (brittle bones).
3. A hot flush most typically lasts for:
a few seconds / a few minutes* / half an hour or more / don't
know
4. After menopause, womens' risk from heart disease is:
decreased / increased* / unchanged / don't know.
5. The risk of breast cancer is:
slightly decreased / slightly increased* / unchanged / don't
know / after long-term use of hormone replacement therapy.
6. A high-fibre diet:
helps reverse osteoporosis / helps prevent osteoporosis /
makes no difference to osteoporosis * / don't know
7. Hot flushes are associated with:
changes in progesterone levels / endorphin activity /
decreasing oestrogen levels* / don't know.
8. To avoid pregnancy, women in their forties are generally
recommended to continue contraception after the last period:
for one year / for two years* / until aged-54 / don't
know
9. Compared to non-smokers, women who smoke on average have:
an earlier menopause * / a later menopause / the same
menopause / don't know.
10. At present it is estimated that:
7-10% * / 17-20% / 27-30% / don't know /
of menopausal women in Britain are currently on Hormone Re-
placement Therapy.

(* Correct responses, scored 1.)

Appendix 4.

ATTITUDE TO MENOPAUSE SCALE

(* Scoring is reversed for the negatively phrased items.)

1. Physical attractiveness declines noticeably after menopause.*
2. It is good to be free from menstrual periods after menopause.
3. Menopause is part of normal life which most women can deal with themselves.
4. Menopause is an unpleasant reminder of aging and death.*
5. It is a relief to be free from the risk of pregnancy after menopause.
6. Hormonal changes at menopause cause depression or irritability.*
7. Menopause can mark the beginning of a new and fulfilling stage of a woman's life.
8. Menopause brings problems with physical health.*
9. Enjoyment of sexual activities increases after menopause.
10. Menopause is a deficiency disease which requires medical treatment in most cases.*

Appendix 5.

MENOPAUSE LOCUS OF CONTROL SCALES

(Internal items)

If I feel bad at menopause, I will be able to make myself feel better.

It's up to me to take care of myself and prevent problems from occurring during menopause.

(Chance items)

No matter what I do, if I am meant to have a bad time at menopause, I will.

If I am to have difficulties with menopausal symptoms, it would be down to fate.

(Powerful Others items)

My doctor is the person who will be able to help me most during menopause.

As soon as I reach menopause, I shall consult a medically trained person who will tell me what to do.

Appendix 6.
SERIOUSNESS AND SUSCEPTIBILITY SCALES

How serious would you rate the impact of each of the following on women's lives:

- frequent hot flushes
- a prolonged bad experience of menopause
- osteoporosis (brittle bones)

How likely do you think you will develop the following:

- frequent hot flushes
- generally feeling bad at menopause
- osteoporosis

Appendix 7.
REGULAR EXERCISE: PERCEIVED BENEFITS AND BARRIERS
(* Barriers items, others are benefits items.)

- Regular exercise would help keep me in trim.
- There are too few local exercise facilities that I can easily use.*
- Regular exercise helps reduce the risks of many diseases.
- I feel embarrassed when seen exercising.*
- Regular exercise requires too much effort from me.*
- Exercise is relaxing because it releases tension and frustration.
- It is difficult to fit regular exercise in with my routine.*
- Regular exercise gives me greater self-confidence.
- I get bored easily with exercise.*
- I feel guilty if I don't exercise at all.

Appendix 8.
FOOD CHECKLIST.

Please tick YES the foods you consumed YESTERDAY. If you are unsure, tick YES and write down what exactly you had. Remember to also answer the questions below the Checklist.

		YES			YES
cereal	high-fibre (wholewheat, bran or bran-reinforced varieties, muesli, etc.)		bread, roll, etc.	wholegrain/brown	
	regular (cornflakes, rice crispies, Special K, etc.)			white regular	
sugar (e.g. in tea, cereal) / honey / preserves / confectionery			butter on bread		
bacon or sausage			butter in cooking, on vegetable, etc.		
cold cuts (Salami, luncheon meat, cornbeef, pate, etc.)			any food deep-fried		
poultry (e.g. chicken, turkey)	with skin		salad	at lunch	
	without skin			at dinner	
pulses (baked beans, kidney beans, lentils, etc.)			fruit		
cheese	low-fat (e.g. cottage, Bân, fat-reduced Cheddar)		yoghurt	low-fat	
	regular			regular	
pastry (e.g. Danish, scone, croissant, pancake, etc.)			fish (fresh or processed)		
cake / pudding / dessert , etc.			biscuit		
dairy cream (e.g. in cooking, as topping, etc.)			glass of water		

Appendix 9
SHORT SELF-ESTEEM SCALE

1. I feel full of life.
2. I lack pride in myself.
3. I am happy with the way I look.
4. I wish I was someone else.
5. I feel I have lots of good qualities.

Appendix 10.

DETAILS OF INTERVENTION

The preparation workshops are summarised in Figure ?. Two group sessions each lasted 1.5 hours were carried out by two clinical psychologists. Two of the five practices were not able to provide facilities for the groups, therefore the groups took place in the remaining 3 practices. Group sizes varied between 4 and 8. Brief talks by the facilitators about different aspects of the menopause transition alternated between questions and discussions. Topics covered were: definition and physiological changes of menopause, health implications, hormone replacement therapy and self-help, how to prepare (examine attitudes, reduction in stress, smoking and alcohol, healthy eating, weight-bearing exercise, pelvic floor exercise), and an exercise in goal-planning to facilitate systematic behaviour change where relevant.

Between the 2 sessions, the women were first of all, encouraged to talk about issues relating to the menopause with their partner or a significant other person; and secondly, to consider a health-related goal (eg. reduce stress, take up exercise, increase calcium intake) that was relevant to them. At the end of the 2nd session, the women were all given an information folder comprising: 1) a handout summarising the topics covered during the sessions, with a list of useful addresses and telephone numbers and suggestions for further reading (see Appendix ? for the

structure of handout); 2) an audio cassette tape on which a comprehensive stress management course was recorded; 3) standard health education booklets on healthy eating, exercise, smoking and alcohol control, and a calcium chart listing the calcium content of common foods).

STRUCTURE AND CONTENT OF PREPARATION WORKSHOPS

Workshop 1

- Introduction
- Warm-up: each person talks about her concerns and anxiety about menopause followed by discussion,
- Talk: 'Menopause: facts & myths' (15 minutes) - menstrual cycle, hormonal and menstrual changes at menopause, hot flushes and vaginal changes, birth control in mid-life, health issues in the post-menopause (eg osteoporosis), and common myths (eg mid-life crisis, emotional instability).
- Questions and discussion (15 minutes).
- Talk: 'Preparing for menopause' (15 minutes) - be informed, examine our attitudes, a fresh look at our lifestyle with particular attention to diet, exercise, smoking, alcohol, managing tension and stress, putting ourselves first.
- Questions and discussion (15 minutes).
- Homework: read handout, note down questions, discuss menopause with partner or another person, consider a health behaviour target.

Workshop 2

- Feedback, queries on last session or handout.
- Talk (15 mins): 'Self-help and treatment at menopause' - self-help for hot flushes, relaxation, vaginal remedies, peer support, alternative therapies, facts and myths of HRT.
- Discussion (10 minutes): 'HRT - a personal choice'.
- Talk (10 minutes): 'Changing lifestyle' - basic principles of goal-planning, how to sustain effort, what to do if we lose interest.
- Discussion (10 minutes): 'Barriers to change'.
- Practice session (20 minutes): goal-planning with example targets from participants.
- Participants filled in anonymous evaluation forms on the structure and content of the workshops.
- Summary.

Handout

(see below)

- Information on topics talked discussed in greater detail; list of useful addresses and telephone numbers; suggestions for further reading.
- Audio-cassette on stress and relaxation techniques based on Jacobson's method of muscular relaxation.
- Health education booklets on: healthy eating, exercise, smoking cessation, alcohol control, and calcium chart

**HANDOUT FOR PARTICIPANTS OF MENOPAUSE PREPARATION
(structure only)**

The information was prepared by the author and based on the following sources (the structure (only) of the hand-out is outlined below):

- 1) The menopause literature which formed part of Chapters 1 to 3 in this thesis;
- 2) Royal College of General Practitioners (1990) Hormone Replacement Therapy.
- 3) Hunter, M (1990) Your Menopause. Pandora.
- 4) Boston Women's Collective (1984) Ourselves Growing Older.

**INFORMATION TO HELP YOU
PREPARE FOR MENOPAUSE AND MIDLIFE**

1. MENOPAUSE

What is it ?
What happens ?
How might it affect me ?

2. OTHER ISSUES OF HEALTH AND WELL-BEING IN MIDLIFE

3. PREPARATION FOR MENOPAUSE AND MIDLIFE

Positive attitudes
Diet
Exercise
Stress and relaxation

4. DEALING WITH MENOPAUSE

How can I help myself ?
Hormonal treatment
Birth control in midlife

5. LIFESTYLE CHANGES & PERSONAL HEALTH TARGETS

6. INFORMATION AND FURTHER READING

(This handout is written for premenopausal women expecting to but have not yet reached natural menopause. Other publications might be more appropriate for those who have had surgical menopause or who are already past menopause.)

1. MENOPAUSE

1a. What Is It ?

1b. What Happens ?

1c. How Might It Affect Me ?

1c(i) Hot Flushes

1c(ii) Vaginal Changes

2. HEALTH AND WELL-BEING DURING MIDLIFE

2a. Sexuality

2b. Sleep

2c. Bladder Control

2d. Weight

2e. Mood

2f. Osteoporosis

2g. Heart Disease and Strokes

3. PREPARATION FOR MENOPAUSE AND MIDLIFE

3a. Positive Attitudes

3b. Healthy Eating

3c. Exercise

3C(i) Type

3C(ii) Frequency and Duration

3C(iii) Safety Considerations

3C(iv) Benefits and Barriers

3C(v) Suggestions for Sustaining Your Exercise Routine

3d. Pelvic Floor Exercise

3e. Stress, Tension and Relaxation

M O R E

Green leafy vegetables
(spinach, spring greens, watercress, broccoli, parsley etc)

Other vegetables, fruits and salads

Pulses (lentils, kidney beans, baked beans, chick peas, etc)

Low-fat dairies (skimmed milk, low-fat cheese and yoghurt)

Fish - without batter, especially those eaten whole with bones
(such as tinned sardines, pilchards, whitebait, etc)

Poultry (chicken, turkey) - without skin

Bean curd or Tofu

Staples - include some brown varieties
(breads, rice, spaghetti, macaroni, vermicelli, noodles, etc.)

High-fibre cereals
(muesli, bran, wholewheat and fibre-reinforced varieties, etc.)

Dry-roasted nuts and seeds

Water

L E S S

Butter/lard/margarine/cooking oil/rich sauces or dressings

Deep-fried foods

Full-fat dairies
(ice cream, fresh cream, full fat milk and cheese)

Sugar
(Sugar, honey, syrup, sweets, chocolates, preserves, sugary soft drinks, etc)

Pastry/biscuits/cakes/pudding/dessert

Processed Meat
(burgers, sausage, bacon, salami, cornbeef, salt beef, meat loaf, pate etc)

Salt and heavily salted foods

Caffeine
(coffee, tea, cola drinks, cocoa etc)

Alcohol and Tobacco

4. DEALING WITH THE MENOPAUSE

4a. How Can I Help Myself ?

- 4a(i) Managing flushes and sweats
- 4a(ii) Managing Vaginal Changes
- 4a(iii) Look after Yourself (refer to audio cassette)
- 4a(iv) Self-Help Groups for Menopausal Women
- 4a(v) Supplements, Alternative Remedies & Approaches

4b. Hormonal Replacement Therapy (H.R.T)

- 4b(i) What is HRT
- 4b(ii) Background
- 4b(iii) Benefits (hot flushes / night sweats / vaginal dryness/ osteoporosis/ heart disease & stroke)
- 4b(iv) Side Effects
- 4b(v) Health Risks (cancer of the womb/breast cancer contraindications)
- 4b(vi) Your Choice
Before starting treatment
During treatment

4c. Birth Control in Midlife

(information drawn from Our Bodies, Ourselves)

- The Pill
- Intra-uterine Device
- Barrier Methods
- The Rhythm Method
- Sterilisation

5. PERSONAL HEALTH TARGETS

5a. Basic Considerations

1. Is the target or goal very important to you ?
2. Is it within your control ?
3. Will your goal be encouraged by those around you ?
4. Will it be obvious when the goal is reached ?
5. Does it depend on risky and unlikely events ?

5b. Setting Yourself A Goal

6. INFORMATION AND FURTHER READING

Women's Midlife Project information line

6a. Menopause Groups

6b. Women's Health and Support Groups

6c. Help for Personal, Emotional and Relationship Problems

6d. Alternative Approaches

6e. Further Reading

Papers and Abstracts from Current Research

A. Publications of current research:

Liao, KLM, Hunter, MS & Weinman, JA (in press) Health behaviours and their correlates in a general population sample of 45-year old women. *Psychology & Health*.

Liao, KLM & Hunter, MS (in press) Knowledge and beliefs about menopause in a general sample of 45-year old women. *Journal of Reproductive & Infant Psychology*.

Hunter, MS & Liao, KLM (1994) Intention to use hormone replacement therapy in a general sample of 45-year old women. *Maturitas*, 20: 13-23.

Liao, KLM & Hunter, MS. Preparation for menopause: outcome of health education intervention for mid-aged women in primary care. Submitted to *Psychology & Health*.

B. Publications drawn from current and other studies:

Liao, KLM & Hunter, MS (1994) The Women's Mid-life Project: An evaluation of additional psychological services for mid-aged women in primary care. *British Psychological Society DCP Forum* No.65.

Liao, KLM, Hunter, MS & White, P (1994) Stereotyped beliefs about menopause of mid-aged women and their general practitioners. *Family Practice*.

C. Conference papers and abstracts drawn from current research presented by author of this thesis:

British Psychological Society Special Group in Health Psychology Annual Conference, St. Andrews University, 1992.

Society of Reproductive & Infant Psychology Annual Conference, Glasgow University, 1992.

Seventh Congress of the International Menopause Society, Stockholm, 1993.

British Association of Behavioural and Cognitive Psychotherapies, Lancaster University, 1994.

BPS Annual Conference, Warwick University, 1995.

Extract from comment at the back of questionnaires

Comments were invited at the end of the postal questionnaires and the section reads as follows. The extracts were randomly picked and appeared on the questionnaires in the exact forms presented below. In the case of a particularly long comment, only the main points raised are presented...

We are interested in any comment or queries that you may have, be it health/lifestyle, menopause, views/feelings about mid-life, or any major event in your life:

PI Subjects

...my mild depression is the result of having worked very hard for an exam which - I took early in June & then finding that although I passed there was no immediate change in my life - As a result of trying to make a better life for myself I have given up a full time job...[ex-teacher; divorced]

...being part of this study...perhaps make me braver about discussing it with friends...I think if I have issues to confront they are more general ones about old age, about losing a sense of being needed, changing your relationship with your children, etc. [gynaecologist]

...BY ATTENDING THE PROJECT, HANDOUT ETC. I CAN NOW SEE THE IMPORTANCE IN YOUR OWN ATTITUDE DIET, EXERCISE. AT PRESENT I FEEL ITS GIVEN ME A MORE POSITIVE OUTLOOK. THINK OF MYSELF MORE, ALTHOUGH I STILL FEEL AFFECTED BY FAMILY. ALSO MY MOTHER LIVES NEXT DOOR SO I AM TRYING NOT TO GET STRESSFUL OVER THINGS. I HOPE TO ENJOY MY MIDLIFE AND NOT TAKE EVERYONES PROBLEMS ON BOARD! [school meals supervisor, married]

...I have tried to fit in exercise but sometimes felt just too tired to do routine - so left it. As the days went on, it seems harder to start again. I find this discouraging as I know I need to exercise [full-time teacher, married]

I did not find the relaxation tape helpful it doesn't suit my personality at all - making time to sit + read or watch T.V and not do some-thing else at the same time its much more suited to my needs and is one of my aims. [acting deputy headmistress; cohabiting]

I wish women were given the same attention and interest that men get when they visit their G.P. I have just expelled a tapeworm (homeopathically)...my GP thought my bowel problems were only due to anxiety and wanted to book me in for counselling. [unemployed; living with husband; no children]

...very deep sadness at the prospect of not having any more children. The menopause and periods seem an unfair nuisance/pain to someone who has failed to make use of her creative potential (I tried to get pregnant + couldn't) why should I have periods when I can't have children? The menopause spells the very end of any chance at all. I feel guilty at these feelings since I have had one child and adopted a beautiful baby! [college lecturer]

owing to illness in my family (hospital visiting) I have not exercised or made more time for myself - but am going to try to make a real effort to do so. [school helper living with husband and teenage son]

...quite a stressful year as both my parents have been ill and...although not now needing constant attention as they were for the few months each side of Christmas...my father is, I think, very depressed...For some time this involved me in up to 4 hrs travelling 5 days a week. I've still not resumed some of the interests I used to have...unresolved decisions to make about my own lifestyle - I share a house with a group of people much younger than me which I used to enjoy. but I'm not sure whether its still appropriate. [single; full-time civil servant]

my memory is appalling. I don't know whether or not this is to do with extreem pressure at work, or the same at home. Or of course some aging or illness problem (my allergies appear to be worse). [married woman employed as home-help]

Having wanted to study (with the open university) I've recently found myself under a great deal of pressure at work... and eventually work (being essential) was given priority + study has to be dropped...disappointment because I hadn't been able to do what I wanted + because I felt inadequate for not being able to cope... [single women working full-time as account clerk]

Very aware that had I not miscarried, the baby was due this Friday - I am giving myself time to grieve & letting friends/partner/colleagues know that this is going on, hence periods of depression. Work...look pretty grim...trying to live in the preseth and take each day as it comes. Have quite a sense of control & being supported at present. [student advisor; cohabiting; no children]

For two years now I know I have been suffering from thyroid- but could not get anyone to take me seriously...[self-employed woman contemplating divorce]

From the point of view of my figure, I must be one of the few people I know, who is really content with my shape! (Unless I go for major cosmetic surgery, there is not much I can do about my face! [widow; freelancing interpreting/translating & singing])

This time of life involves so much more change physically and emotionally than I ever imagined. All these things should be discussed much more. They must be de-mystified and young women must know what to expect & not feel they are the only ones to ever go through these things [singer/actress; separated; 2 adopted children]

In my circumstances "bad luck" means such a family situation that I have to allow almost all my free time for others namely the elderly mother requiring nursing and the teenage daughter as well as doing my job and the normal housekeeping [lives with husband, only child and non-English speaking mother; worked 4 days a week]

why do I still tend to feel that all I've done so far is just the rehearsals? I'm too young to be looking at being 50 soon. and how on earth will I cope with being a grandmother (probably within the next 2 years)? [divorced public affairs controller]

I enjoyed relaxation tape, although I feel I did not make full use of the information I received. I have a general understanding, but still not a specific understanding of menopause. This is basically down to me. [single woman on alcohol recovery programme and living with mother]

C1 Subjects

I do feel that quite a lot of problems at this time are psychological - In my experience ie when I have questioned women, there is a prevailing sense of secrecy - even shame. Many women feel they have no purpose in life if they cannot conceive or attract. I think this is a tragedy and an indictment against society [divorced; lived with 1 child; worked in a shop]

I would be interested to see your final summing of this survey. It is sometimes difficult to differentiate between life's obstacles or blaming it on menopause symptoms. iE:- feeling low because of husband's redundancy & having to live on a much lower income, with a family still to support in further education [married; practice nurse]

I feel that the age menopause takes place is at a time, for most women like myself, when family life makes tremendous emotional effects & with the uncertainty of future events puts a tremendous strain on us...This week my step-father died of cancer leaving the responsibility of my invalid mother to me...I envisaged at mid 40, my children would be young adults in employment. My husband would be happy in his career & I would be, for the first time in 25 years of marriage, be able to do things for myself that I had been putting off because of family commitments

& lack of finance; such as Art classes, learning to swim, going to the theatre, going away for short breaks...[secretary living with unemployed husband and son]

There is a lot to talk over but not to put in words. I feel life is CHALLENGE for me and I want to do so much but there isn't enough time for everything. [Asian Development Worker living with husband and 2 teenage children]

I feel extremely ignorant about the menopause...it is a case of waiting until its relevant then dealing with it as it arises. Your questionnaire suggests we can prepare now. [teacher living with husband and 2 adult children; pregnant]

I have started on HRT. I've been on it for only 3 weeks so haven't anything to report yet. I went to my doctor before my periods stopped as my mother suffers with osteoporosis, and I am very similar to her physically...[divorced woman living alone and working as a carer in learning disabilities]

Being overweight for many years has resulted in lack of confidence in my speech, abilities + academic achievements when in company. Lack of exercise has been due to laziness to implement a fixed regime...& think of a well-balanced diet (minus pastry, desserts, etc.)! More information on menopause, getting older, trying to keep up with an intelligent 7-year old lad, would be most appreciated. [IT standard officer]

...very fortunate...been divorced for a long time...pursue my career and my own interest...having a philosophical or religious or spiritual framework of reference is important...would be happy to meet other women of my age group [Headteacher living with 1 child]

...want to start thinking about myself more + to stop looking after other people. I'm fed up cleaning, cooking, shopping, etc...relax more...do what I want to do - I've looked after other people for 30 years, can you imagine that? I've been feeling like this for a few months now, my husband and daughter are aware...try to help a "little" bit - but I still feel the same way. I'm sure I could easily live alone - although I do love my family [woman employed as clinic clerk/slimming consultant]

...recently been made redundant...now got a new job outside London...all these changes are having an effect on my outlook for the future, I am feeling more positive. [single woman working as staff development coordinator]

...was experiencing 1/2 hourly hot flushes & waking up several times a night in a pool of sweat...put on Prempack H.R.T. and after about 3 days I felt marvellous. No hot flushes bags of

energy. I would thoroughly recommend any woman suffering from any bad effects of the menopause seek help from her doctor [secretary; married; 2 children]

...being almost 47, I try to be as young in my outlook as possible. Having a ten year old daughter who is now approaching young womanhood herself...not making things seem gloom and doom regarding menstruation...I'd like to try and have a positive attitude towards coming through the Menopause. [married school helper]

...been made redundant...have taken the sewing machine + knitting machines business on as my own business. I work with another girl...a lot of pressure...as I am single I have the worry of not earning enough to pay the mortgage but its worth having a try. [sales demonstrator living with mother]

I started H.R.T. last year Prempak C...periods twice a month, so it just left me feeling tired, and depressed. I would like to know more about HRT. but I dont really want to trouble my doctor as they really haven't got a lot of time. How do you know when you need HRT. I am now 47 years of age so I expect I have started the menopause, also are there more than one type of HRT you can take if one doesn't suit you? I would be grateful for any information you can give. (different colour pen 'I have now stopped taking HRT) [kitchen assistant living with husband and 2 teenage children]



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ADDENDUM 1

Ethical approval and announcement of research to patients at the 5 general practices.

[Practice letter headed paper]

July, 1991

To:

Dear

We wish to inform you that this practice is one of five involved in a research project to develop and evaluate services for women aged 40-55 years, ie. before and after menopause. The project is funded by the South East Thames Regional Health Authority. It is being carried out by two research psychologist, who will be routinely contacting women within that age group by letter, starting this September.

Participation is entirely voluntary and will not affect you health care in any way. And of course, you are also free to withdraw from the project at any time.

If you do NOT wish to be contacted at all, or would like to talk to someone about the project, please contact Ms Liao or one of doctors at this practice any time.

With best wishes,

Signed,

Ms. K. L. M. Liao
Research Psychologist

Dr.
General Practitioner



To whom it may concern:

I am writing to confirm that ethical approval was granted by King's College Hospital Ethical Committee in September 1991 for Primary Care Development Project (South East Thames Regional Health Authority) 6/91 entitled "Implementation and evaluation of additional psychological services for menopausal women in general practice".

A handwritten signature in black ink, appearing to read 'Myra S Hunter', with a stylized flourish at the end.

Myra S Hunter PhD C Psychol AFBPS
Grant Holder/Senior Research Fellow
UMDS Guy's Medical School.

ADDENDUM 2

WOMEN'S MID-LIFE SURVEY

NAME: _____ ADDRESS: _____
TEL NO: Day _____ OCCUPATION: Your Own _____
Eve. _____ Partner's _____
(If unemployed, put U)
AGE: _____ AGE LEFT FULL TIME EDUCATION: _____
MARITAL STATUS: (tick one) ETHNIC GROUP: (tick one)
Living with partner: _____ Cohabiting BRITISH: _____ White
_____ Married _____ Non White
Not with Partner: _____ Single Non-BRITISH: _____ White
_____ Widowed _____ Non White
_____ Divorced/ OTHERS: _____
separated (please state)

PLEASE CIRCLE YOUR ANSWER AS APPROPRIATE

Are you employed at the moment: YES/NO If so: FULL or PART-TIME
Do you think your general health is: POOR/FAIR/GOOD/VERY GOOD
Are you suffering from any major physical or mental illness or
disability: YES/NO. If so, what: _____
How many times have you seen a doctor in the last month: 0/1/2/3/4
Are you on any medication: YES/NO. If so, what: _____
What is your height: _____ft _____ins; weight: _____stones _____lbs
Approximate date of your last cervical smear test: _____
Do you examine your breast at least once a month: YES / NO
Have you had a hysterectomy: YES/NO; with ovaries removed: YES/NO
(If YES to either question, ignore next question)
Have you had a menstrual period within the past 12 months: YES/NO
If so, are your menstrual cycles: regular / irregular
Do you suffer from any menstrual trouble: YES / NO
If so, what: _____
Have you had any other gynaecological surgery (eg D & C): YES/NO
If so, what and when: _____
Have you ever used the oral contraceptive pill: YES/NO
What form of contraception (if any) do you now use: _____



If married/cohabiting, is your relationship: POOR/FAIR/GOOD/V.GOOD

Do you have children: YES/NO

If so, how many still live with you: _____

If you have been pregnant, did you experience any problems during pregnancy, birth and afterwards (e.g. miscarriage, depression, etc.

YES / NO. If so what: _____

Did you attend preparation classes for childbirth eg. NCT or hospital antenatal classes: YES / NO

This survey is made up of different questionnaires that consider various aspects of mid-life. It contains both open questions and rating scales. You may find that the scales do not always express your thoughts perfectly - no scales do. Still, please rate the items as accurately as possible and go through the pages in the order set out.

In several parts of the survey, we ask for your views on the menopause. We understand that this may not seem relevant at the time but again, please go through them all.

SECTION A

1. What changes (if any) do you think most women experience during menopause?

2. What do you see as the main factor that determines whether a woman would have no problems, or have a bad time at menopause?

3. Is the menopause something you have actually talked about?

☐ YES ☐ NO

4. In general, is the menopause something you would prefer not to talk about just yet?

☐ TRUE ☐ NOT TRUE

SECTION B

(i) Food checklist: Tick YES the foods you consumed YESTERDAY. If you are not sure, tick YES and write down what exactly you had.

		YES			YES
cereal	high-fibre (wholewheat, bran or bran-reinforced varieties, muesli, etc.)		bread, roll, etc.	wholegrain/brown	
	regular (cornflakes, rice crispies, Special K, etc.)			white regular	
sugar (e.g. in tea, cereal) / honey / preserves / confectionery			butter on bread		
bacon or sausage			butter in cooking, on vegetable, etc.		
cold cuts (Salami, luncheon meat, cornbeef, pate, etc.)			any food deep-fried		
poultry (e.g. chicken, turkey)	with skin		salad	at lunch	
	without skin			at dinner	
pulses (baked beans, kidney beans, lentils, etc.)			fruit		
cheese	low-fat (e.g. cottage, Bân, fat-reduced Cheddar)		yoghurt	low-fat	
	regular			regular	
pastry (e.g. Danish, scone, croissant, pancake, etc.)			fish (fresh or processed)		
cake / pudding / dessert, etc.			biscuit		
dairy cream (e.g. in cooking, as topping, etc.)			glass of water		

(ii) Additional Questions

1. APART FROM pulses and salads, please list ANY OTHER vegetable portions (if any) you ate YESTERDAY: (eg. carrots, peas)

2. Please estimate how much milk you consumed in total yesterday: (inc. with cereal, tea, custard, etc.)

☐ none ☐ 1/4 pint ☐ 1/2 pt ☐ 3/4 pt ☐ 1 pt or more

Was this: ☐ full cream ☐ (semi)skimmed ☐ both

3. Please estimate how much tea/coffee you drank YESTERDAY: (excluding herbal or decaffeinated varieties) _____ cups/mugs

4. At present, do you take any mineral or vitamin supplement, tonic, and so on:

☐ YES (specify): _____ ☐ NO

5. Do you smoke: ☐ YES (specify): _____ per day ☐ NO

6. Please estimate how many units of alcohol you consume on an average week:

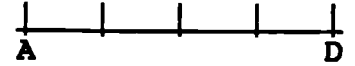
(1)

WINE: 1 glass = 1 unit
BEER: 1 pint = 2 units

1 bottle = 7 units
extra strong pint = 3 units

These are statements about the menopause. Please rate how much you agree or disagree with each one by circling a notch on each scale. For example:

Agree **Disagree**



A horizontal number line with five tick marks. Below the first tick mark is the letter 'A'. Below the second tick mark is the letter 'B'. Below the third tick mark is the letter 'C'. Below the fourth tick mark is the letter 'D'. Below the fifth tick mark is the letter 'E'.

A horizontal number line with five tick marks. Below the first tick mark is the letter 'A'. Below the second tick mark is the letter 'B'. Below the third tick mark is the letter 'C'. Below the fourth tick mark is the letter 'D'. Below the fifth tick mark is the letter 'E'.

A horizontal number line with five tick marks. Below the first tick mark is the letter 'A'. Below the second tick mark is the letter 'B'. Below the third tick mark is the letter 'C'. Below the fourth tick mark is the letter 'D'. Below the fifth tick mark is the letter 'E'.

A horizontal number line with five tick marks. Below the first tick mark is the letter 'A'. Below the third tick mark is the letter 'C'. Below the fourth tick mark is the letter 'D'. There are two unlabeled tick marks between 'A' and 'C', and one unlabeled tick mark between 'C' and 'D'.

A horizontal number line with five tick marks. Below the first tick mark is the letter 'A'. Below the second tick mark is the letter 'B'. Below the third tick mark is the letter 'C'. Below the fourth tick mark is the letter 'D'. Below the fifth tick mark is the letter 'E'.

A horizontal number line with five tick marks. Below the first tick mark is the letter 'A'. Below the second tick mark is the letter 'B'. Below the third tick mark is the letter 'C'. Below the fourth tick mark is the letter 'D'. Below the fifth tick mark is the letter 'E'.

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A horizontal number line with five tick marks. Below the first tick mark is the letter 'A'. Below the second tick mark is the letter 'B'. Below the third tick mark is the letter 'C'. Below the fourth tick mark is the letter 'D'. Below the fifth tick mark is the letter 'E'.

SECTION E

In general how would you rate your knowledge of the menopause?

☐ Poor ☐ Fair ☐ Good ☐ Very Good

Where does this knowledge come from? (tick one or more)

☐ Mother ☐ Other Relatives (eg sister, aunt)
☐ Friends/Acquaintances ☐ GP or Hospital Doctor
☐ Mass Media(e.g. radio, TV., newspapers, magazines)
☐ Books ☐ Health Education Leaflets
☐ Well Woman/Family Planning Clinic
☐ Others (please specify) : _____

There may well be no problems at all for you, but should you start experiencing some, are you MOST likely to:
(tick one)

☐ try self-help (please specify): _____
☐ see a doctor (please state reason): _____
☐ ask for hormone replacement therapy (H.R.T.)
☐ others (please specify): _____

How do you think you will feel about H.R.T. when you reach menopause?
(tick one)

☐ I definitely won't want H.R.T. *
☐ I'd rather not have H.R.T. but would consider it *
☐ I'd like to have H.R.T. but have some concern *
☐ I definitely will want H.R.T. *
☐ I am already on H.R.T.
☐ I don't really know what it is

* Please state reason for choice: _____

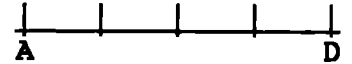
SECTION F

These statements are views on regular exercise. Whether or not you take regular exercise, please rate how much you agree or disagree with each statement by circling a notch on each scale.

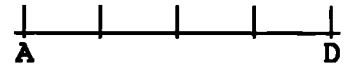
Agree

Disagree

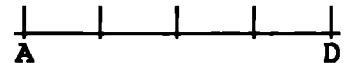
Regular exercise would help keep me in trim.



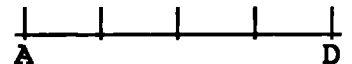
There are too few local exercise facilities that I can easily use.



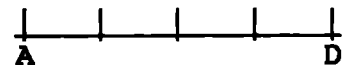
Regular exercise helps reduce the risks of many diseases.



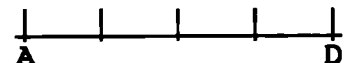
I feel embarrassed when seen exercising.



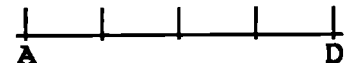
Regular exercise requires too much effort from me.



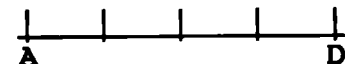
Exercise is relaxing because it releases tension and frustration.



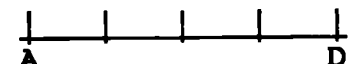
It is difficult to fit regular exercise in with my routine.



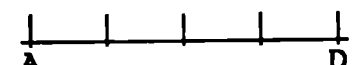
Regular exercise gives me greater self-confidence.



I get bored easily with exercise.



I feel guilty if I don't exercise at all.



SECTION G

Please rate how much you agree or disagree with the following view of the menopause by circling a notch on each scale.

If I feel bad at menopause, I will be able to make myself feel better.

agree					disagr
	—		—		
A					D

No matter what I do, if I am meant to have a bad time at menopause, I will.

	—		—		
A					D

My doctor is the person who will be able to help me most during menopause.

	—		—		
A					D

It is up to me to take care of myself and prevent problems from occurring during menopause.

	—		—		
A					D

If I am to have difficulties with menopausal symptoms, it would be down to fate.

	—		—		
A					D

As soon as I reach menopause, I shall consult a medically trained person who will tell me what to do.

	—		—		
A					D

How serious would you rate the impact of EACH of the following on women's lives:

	very serious				not at all serious
--	--------------	--	--	--	--------------------

- frequent hot flushes		—		—		
------------------------	--	---	--	---	--	--

- osteoporosis (brittle bones)		—		—		
--------------------------------	--	---	--	---	--	--

- a prolonged bad experience of menopause		—		—		
---	--	---	--	---	--	--

Please estimate how likely you are to develop EACH of the following:

	very likely				not at all likely
--	-------------	--	--	--	-------------------

- osteoporosis (brittle bones)		—		—		
--------------------------------	--	---	--	---	--	--

- generally feeling bad during menopause		—		—		
--	--	---	--	---	--	--

- frequent hot flushes		—		—		
------------------------	--	---	--	---	--	--

4. After menopause, women's risk for heart disease is:

<input type="checkbox"/>	decreased	<input type="checkbox"/>	unchanged
<input type="checkbox"/>	increased	<input type="checkbox"/>	Don't Know

5. The risk of Breast cancer is :

<input type="checkbox"/>	decreased	<input type="checkbox"/>	unchanged
<input type="checkbox"/>	increased	<input type="checkbox"/>	Don't Know

in long-term users of hormone replacement therapy.

6. A high-fibre diet:

<input type="checkbox"/>	helps reverse osteoporosis
<input type="checkbox"/>	helps prevent osteoporosis
<input type="checkbox"/>	makes no difference to osteoporosis
<input type="checkbox"/>	Don't Know

7. Hot flushes are due to:

<input type="checkbox"/>	changes in progesterone levels
<input type="checkbox"/>	endorphin activity
<input type="checkbox"/>	decreasing oestrogen levels.
<input type="checkbox"/>	Don't Know

8. To avoid pregnancy, women in their forties are generally recommended to continue contraception after the last period:

<input type="checkbox"/>	for one year	<input type="checkbox"/>	for two years
<input type="checkbox"/>	up to age 54	<input type="checkbox"/>	Don't Know

9. Compared to non-smokers, women who smoke have:

<input type="checkbox"/>	an earlier menopause
<input type="checkbox"/>	a later menopause
<input type="checkbox"/>	the same menopause
<input type="checkbox"/>	Don't Know

10. At present, it is estimated that:

<input type="checkbox"/>	7.- 10%
<input type="checkbox"/>	17 - 20%
<input type="checkbox"/>	27.- 30%
<input type="checkbox"/>	Don't Know

of menopausal women in Britain are on hormone replacement therapy.

COMMENT

We are interested in any comment or queries that you may have, be on health/lifestyle, menopause, views/feelings about midlife, or a major event in your life. Please feel free to comment:

SECTION H

The 4 statements below are beliefs about health and illness. Please state how much you agree with each one using the 7 point scale below. Write the appropriate number to the right of each statement

Strongly Agree 1	2	Moderately Agree 3	4	Moderately Disagree 5	6	Strongly Disagree 7
------------------------	---	--------------------------	---	-----------------------------	---	---------------------------

- . There is nothing more important than good health. _____
- . Good health is of minor importance in a happy life. _____
- . If you don't have your health, you don't have anything. _____
- . There are many things I care about more than my health. _____

SECTION J

Please tick ONE box for each of the following ten statements on menopause.

1. ON AVERAGE, it takes

<input type="checkbox"/>
<input type="checkbox"/>

 several months

<input type="checkbox"/>
<input type="checkbox"/>

 four years
a couple of years don't know
for menstrual periods to change from being regular to stopping completely.

2. It is estimated that

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

 15% 25% 40% don't know of women in Britain are at risk of osteoporosis (brittle bones).

3. A hot flush episode TYPICALLY lasts

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

 a few seconds a few minutes more than half an hour don't know

SECTION K

Please indicate how you are feeling now, or how you have been feeling in the last few days, by putting a tick in the correct box in answer to each of the following items:

A		
D		
7	10	

1. I wake early and then sleep badly for the rest of the night.
2. I get very frightened or panic feelings for apparently no reason at all.
3. I feel miserable and sad.
4. I feel anxious when I go out of the house of my own.
5. I have lost interest in things.
6. I get palpitations or a sensation of 'butterflies' in my stomach or chest.
7. I still enjoy the things I used to.
8. I feel life is not worth living.
9. I feel tense or 'wound up'.
10. I have a good appetite.
11. I am restless and can't keep still.
12. I am more irritable than usual.
13. I worry about getting old.
14. I have headaches.
15. I feel more tired than usual.
16. I have dizzy spells.
17. My breasts feel tender or uncomfortable.
18. I suffer from back-ache / or pains in my limbs.
19. I have hot flushes.
20. I am more clumsy than usual.
21. I have abdominal cramps or discomfort.

[illegible]

- 22 . I feel sick or nauseous.
23. I have lost interest in sexual activity.
24. I have feelings of well-being.
25. I have heavy periods.
26. I suffer from night sweats.
27. My stomach feels bloated.
28. I have difficulty in getting off to sleep.
29. I often notice pins and needles in my hands and feet.
30. I am satisfied with my current sexual relationship. (Please omit if not sexually active.)
31. I have difficulty in concentrating.
32. As a result of vaginal dryness, sexual intercourse has become uncomfortable. (Please omit if not sexually active.)
33. I need to pass urine/water more frequently than usual.
34. My memory is poor.
35. I feel full of life.
36. I lack pride in myself.
37. I am happy with the way I look.
38. I wish I was someone else.
39. I feel I have lots of good qualities.

[illegible]

SECTION L

This section is to determine the way in which different people view certain important health-related issues. Each item is a statement with which you may agree or disagree. Beside each statement is a scale which ranges from STRONGLY DISAGREE (1) to STRONGLY AGREE (6). Please circle ONE number per item to indicate how much you agree with the statement - the more you agree, the higher the number. This is a measure of your personal beliefs, obviously there are no right or wrong answers.

Do not spend too much time on any one item. Try to respond to each item independently and not be influenced by previous choices. And, respond according to your actual beliefs, not how you feel you should believe or how you think we want you to believe.

	strongly DISAGREE	moderately DISAGREE	slightly DISAGREE	slightly AGREE	moderately AGREE	strongly AGREE
If I get sick, it is my own behaviour which determines how soon I get well again.	1	2	3	4	5	6
No matter what I do, if I am going to get sick, I will get sick.	1	2	3	4	5	6
Having regular contact with my doctor is the best way for me to avoid illness.	1	2	3	4	5	6
Most things that affect my health happen to me by accident.	1	2	3	4	5	6
Whenever I don't feel well, I should consult a medically trained professional.	1	2	3	4	5	6
I am in control of my own health.	1	2	3	4	5	6
MY family has a lot to do with my becoming sick or staying healthy.	1	2	3	4	5	6
When I get sick, I am to blame.	1	2	3	4	5	6
Luck plays a big part in determining how soon I will recover from an illness.	1	2	3	4	5	6
Health professionals control my health.	1	2	3	4	5	6
My good health is largely a matter of good fortune.	1	2	3	4	5	6
The main thing which affects my health is what I do.	1	2	3	4	5	6
If I take care of myself, I can avoid illness.	1	2	3	4	5	6
Whenever I recover from an illness, it's usually because other people (e.g. doctors, nurses, family, friends) have been taking good care of me.	1	2	3	4	5	6
No matter what I do, I am likely to get sick.	1	2	3	4	5	6
If it's meant to be, I will stay healthy.	1	2	3	4	5	6
If I take the right actions, I can stay healthy.	1	2	3	4	5	6
Regarding my health, I can only do what my doctors tells me to.	1	2	3	4	5	6